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Estimates of Subsistence Salmon Harvests Within the Yukon River Drainage in 1991

By

Jeffrey F. Bromaghin

Helen H. Hamner

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AUTHORS

Jeffrey F. Bromaghin is the Region III Regional Biometrician for the Alaska Department of Fish and Game, Division of Commercial Fisheries, 333 Raspberry Road, Anchorage, Alaska 99518.

Helen H. Hamner is the Region III Assistant Regional Biometrician for the Alaska Department of Fish and Game, Division of Commercial Fisheries, 333 Raspberry Road, Anchorage, Alaska 99518.

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ABSTRACT

The number of salmon harvested in Yukon River subsistence fisheries in 1991 was estimated based upon information obtained from subsistence fishermen. Information concerning harvests within the Alaskan portion of the drainage was obtained from returned subsistence fishery permits and personal interviews with a stratified random sample of residents of Yukon River communities. A total of 46,773 chinook, 118,540 summer-run chum, 145,524 fall-run chum, and 37,388 coho salmon were estimated to have been harvested in subsistence fisheries located within the Alaskan portion of the drainage. Subsistence fishing households located in communities where subsistence fishing permits were not required fed an estimated 4,232 dogs a total of 200,893 summer-run chum, 56,363 fall-run chum, and 4,239 coho salmon. In addition, holders of subsistence fishing permits reported feeding 30,655 whole salmon of unspecified species to 2,323 dogs. Estimated harvests within the Canadian portion of the drainage were provided by the Canada Department of Fisheries and Oceans. A total of 9,401 chinook and 4,014 fall chum were estimated to have been harvested in Canadian subsistence fisheries. Therefore, a total of 56,178 chinook, 118,540 summer-run chum, 149,538 fall-run chum, and 37,388 coho salmon were estimated to have been harvested within the Yukon River drainage in 1991.

KEY WORDS: Salmon, *Oncorhynchus*, subsistence, subsistence fisheries, subsistence harvests, dog food, Yukon River

INTRODUCTION

The Yukon River originates in the mountains bordering Southeast Alaska and British Columbia. It flows over 2,300 miles to the Bering Sea, draining a large portion of the Yukon Territory and over a third of the land mass of the state of Alaska. The Yukon River has several large tributary systems, including the Koyukuk, Tanana, and Porcupine Rivers, and a large number of smaller tributaries. For management purposes the Alaskan portion of the drainage is divided into two regions, each consisting of three fishing districts. The Lower Yukon Area is composed of Districts 1, 2, and 3; the Upper Yukon Area is composed of Districts 4, 5, and 6. Figure 1 presents the Alaskan portion of the drainage, showing fishing districts and communities.

Five species of Pacific salmon, chinook *Oncorhynchus tshawytscha*, chum *O. keta*, coho *O. kisutch*, pink *O. gorbuscha*, and sockeye salmon *O. nerka*, spawn within the Yukon River drainage. Bergstrom et al. (1991) provide a brief summary of the morphology and spawning migrations of these species. The chum salmon spawning migration occurs in two distinct segments, termed the summer run and fall run.

Although all five salmon species are harvested in both commercial and subsistence fisheries, chinook, chum, and coho salmon compose the bulk of all harvests. In portions of the drainage, subsistence harvests of some species, particularly chum and coho salmon, are substantial and frequently exceed commercial harvests. Because of the relatively large subsistence fishery harvests, effective management of Yukon River salmon populations requires knowledge of the number of salmon harvested in subsistence fisheries. Information concerning subsistence fishery harvests within the Alaskan portion of the drainage has been collected by either the Commercial Fisheries Division or the Subsistence Division since 1961. The Canada Department of Fisheries and Oceans (DFO) routinely collects information on harvests in the equivalent Canadian fisheries, the Indian food fish, and domestic fisheries. Brannian and Gnath (1988) present a summary of the Yukon River subsistence fishery and a history of data collection activities. Holder and Hamner (1991) discuss the data collection methods employed since 1988.

This report presents estimates of the number of chinook, summer-run chum, fall-run chum, and coho salmon harvested in Yukon River subsistence fisheries in 1991. A number of other quantities, such as the number of households participating in subsistence fisheries and the number of salmon fed to dogs, were estimated based upon data obtained during personal interviews with fishermen.

METHODS

Four sources of information were used to estimate the number of salmon harvested in Yukon River subsistence fisheries. Estimates of the number of salmon harvested by residents of Alaskan communities where subsistence fishing permits were required, referred to as permit communities, were taken as the total of the harvests reported on permits returned through 20 April, 1992. Permit communities are primarily located within Districts 5 and 6 of the Upper Yukon Area (Figure 1). The number of salmon harvested by residents of nonpermit communities was estimated using stratified random sampling techniques

(Cochran 1977). Estimates of the number of chinook and fall chum salmon harvested in Indian food fish and domestic fisheries were obtained from DFO staff in the Whitehorse, Yukon Territory office. In addition, salmon harvested in test fisheries conducted by staff of the Commercial Fisheries Division are frequently given to the public and are assumed to replace salmon obtained through more traditional fishing activities. These salmon were therefore considered to have been harvested in subsistence fisheries.

A list of households located in nonpermit communities within the Yukon River drainage formed the sampling frame for the stratified random sampling program. Each household on the list was assigned a category of subsistence salmon use: unknown, zero, light, medium, and heavy use. Households for which no previous harvest information was available were placed into the unknown-use category. Placement in the other categories was based upon the average total annual harvest of salmon in 1988, 1989, and 1990. Households that harvested no salmon in those years were placed into the zero-use category. Definitions of light-, medium-, and heavy-use differed between the Lower and Upper Yukon areas, reflecting differing patterns of user preferences and species relative abundance. In the Lower Yukon Area, an average harvest of 1 to 200 salmon was considered to be light use, a harvest of 201 to 500 to be medium use, and a harvest >500 salmon to be heavy use. In the Upper Yukon Area, an average harvest of 1 to 100 salmon was considered to be light use, a harvest of 101 to 700 to be medium use, and a harvest >700 salmon to be heavy use.

A stratified random sample (Cochran 1977) of households was drawn from the stratified population; strata were defined by the combinations of community of residence and use categories. In general, strata sample sizes were established based upon the level of use associated with the strata. All strata with medium- and heavy-use categories were censused, 30% of all strata with light-use were sampled, 10% of all strata with zero-use were sampled, and 20% of all strata with unknown-use were sampled. A number of exceptions to these general guidelines were employed: 30% of the zero-use stratum and 50% of the light-use stratum were sampled in Emmonak, Pilot Station, and Tanana and 50% of the light-use stratum was sampled in Holy Cross. In addition, all strata in communities of 35 or fewer households were censused. These exceptions were adopted for a variety of reasons as requested by local management biologists. A final modification to ensure adequate strata sample sizes was adopted. If the above guidelines resulted in a stratum sample size of less than five households, the sample size was increased to the minimum of five or the stratum size.

We attempted to interview an adult member of each sampled household, preferably the primary fisherman. Each interview determined whether or not members of the household participated in a subsistence fishery in 1991, the type of fishing gear used, the number of each salmon species harvested, the number of dogs owned, and the number of each salmon species fed to dogs. The survey instrument is presented in Appendix A. Individuals that could not be personally interviewed were either contacted via the telephone or mailed a questionnaire. The collection of responses obtained was assumed to constitute a stratified random sample. Estimation was performed using classical stratified random sampling methods (Cochran 1977).

RESULTS

Subsistence Harvests In Alaskan Permit Communities

Subsistence fishing permits are required in three areas within the Yukon River drainage: the Tanana River drainage, the Yukon River mainstem between Hess Creek and Dall River, and the Yukon River mainstem between the upstream mouth of Twenty-two Mile Slough and the Canadian border. These areas are located within Districts 5 and 6 (Figure 1). Subsistence fishing permit holders are required to report all harvest information. A total of 423 permits were issued in 1991, 391 of which were returned through 20 April, 1992. The sum of the harvests reported by permit holders was 6,780 chinook, 6,827 summer-run chum, 56,989 fall-run chum, and 21,586 coho salmon. Table 1 contains a summary of the number of salmon harvested by holders of subsistence fishing permits, organized by the permit holder's community of residence.

Subsistence Harvests In Alaskan Nonpermit Communities

The stratified random sampling design resulted in a sample of 1,017 households from a total of 2,098 households located in 31 nonpermit communities. Staff from the Commercial Fisheries Division traveled to each of these communities between 29 August, 1991, and 5 November, 1991, and attempted to interview a member of each household included in the sample. Table 2 contains a list of the communities visited and the dates on which interviews were conducted. A total of 870 households, or 85.5% of the sampled households, were contacted. Table 3 contains a summary of the total number of households, the sample size, and the contact rate for each stratum.

Table 4 contains a summary of the estimated number of households from which at least one member participated in a salmon subsistence fishery, organized by community of residence and use group. A total of 798 households, or 38.0% of all households, were estimated to have participated in a salmon subsistence fishery. Over two-thirds of these households were in strata associated with a light-, medium-, or heavy-use group. Table 5 contains a summary of the fishing gear used by households which indicated they had participated in salmon subsistence fisheries. In the Yukon River drainage, the three primary gear types are drift gillnets, set gillnets, and fish wheels. However, not all gear types are legal in all portions of the drainage.

A total of 38,060 chinook, 105,119 summer-run chum, 85,566 fall-run chum, and 14,482 coho salmon were estimated to have been harvested by residents of nonpermit communities. The estimated total harvests of chinook, summer-run chum, fall-run chum, and coho salmon are organized by community of residence and use group in Tables 6 to 9.

Canadian Indian Food Fish and Domestic Fishery Harvests

Estimates of the numbers of chinook and fall-run chum salmon harvested in the Canadian Indian food fish and domestic fisheries were provided by DFO staff based in the Whitehorse, Yukon Territory office. DFO staff estimated 227 chinook were harvested in the domestic fishery and 9,174 chinook were harvested in the Indian food fish fishery, for a total subsistence harvest of 9,401 chinook salmon. A total harvest of 4,014 fall-run chum was estimated to have been harvested in the Indian food fish fishery. No domestic fall-run chum fishery occurred in 1991.

Total Yukon River Subsistence Salmon Harvest

The total number of salmon harvested in Yukon River subsistence fisheries in 1991 was estimated as the sum of the harvests in the Canadian portion of the drainage, the harvests reported by permit holders, the harvests estimated in the stratified random sampling program, and the test fishery harvests given to the public. A total of 56,174 chinook, 118,540 summer-run chum, 149,538 fall-run chum, and 37,388 coho salmon were estimated to have been harvested (Table 10). The Alaskan component of these harvests occurring in the Lower and Upper Yukon areas are summarized by community of residence in Tables 11 and 12, respectively. The distribution of the harvest with respect to each of the U.S. fishing districts and Canada is graphically presented by species in Figure 2. The species composition of the harvest is graphically summarized by fishing district in Figure 3.

Use of Salmon For Dog Food

One of the primary uses of chum and coho salmon on the Yukon River is for dog food, particularly in the Upper Yukon Area. Commercially harvested salmon are also retained and used for dog food, particularly in District 4. All households in nonpermit communities that reported participating in subsistence fisheries in 1991 were asked how many dogs they owned and how many of each salmon species were fed to dogs. A total of 4,232 dogs were estimated to be owned by households located in nonpermit communities that participated in Yukon River subsistence fisheries (Table 13). These households used an estimated 200,893 summer-run chum, 56,363 fall-run chum, and 4,239 coho salmon as dog food. Tables 14 to 16 detail the utilization of summer-run chum, fall-run chum, and coho salmon for dog food by community of residence and use group. Because chinook salmon are rarely utilized for dog food, an estimate of the number of chinook salmon used as dog food was not computed. In addition, holders of subsistence fishing permits reported feeding a total of 30,655 whole salmon of unspecified species to 2,323 dogs (Russ Holder, personal communication).

Efficiency Of The Sampling Design

Households were placed into use categories based upon their average annual harvest of all salmon species. In order for this stratification system to be efficient, the number of salmon a household harvests must be relatively stable between years. The stability of household harvest levels was investigated in two ways. The total number of salmon harvested in 1991 was compared to the assigned use group of all contacted households. A summary of these comparisons is presented in Table 17. Although some differences are apparent, they are not substantial. In addition, the Pearson product moment correlation coefficient (Freund and Walpole 1987) between total annual subsistence salmon harvests separated in time by 1, 2, and 3 years was computed using reported harvests in 1988, 1989, 1990, and 1991. The correlation coefficients are presented in Table 18. The correlations are not large and they generally do not decrease as the number of years separating harvests increases.

The stratification system was based upon the total number of salmon harvested by an individual household. The primary purpose of the stratification system is to allow households known to harvest large numbers of salmon to be sampled with high probability. However, the data are analyzed separately for each of the salmon species. This discrepancy between the stratification system and the data analysis is a potential flaw in the sampling design. To examine the degree to which this potential weakness defeated the primary purpose of the stratification system, the mean household harvest of each species was compared among use groups. The mean harvests for chinook, summer-run chum, fall-run chum, and coho salmon within use groups are plotted for each of the fishing districts in Figures 4 to 7.

DISCUSSION

Conducting a sample survey in an area as large and diverse as the Yukon River drainage is a difficult and challenging task. A large number of problems hamper efforts to collect the data required to estimate the total subsistence salmon harvest and maintain the quality of the data. Although a complete discussion of all potential problems would itself be a difficult and challenging task, we will list some of the more consequential problems and attempt to identify possible methods to minimize their influence. In addition, we will attempt to address the adequacy of the current sampling design and suggest ways in which it could be improved.

Potential Problems

The household list used as a sampling frame was originally formed in 1988 (Holder and Hamner 1991). Interviewers have since attempted to update the list each year; they discuss the list with knowledgeable individuals in each community during data collection activities. However, this process alone is probably not sufficient to maintain the integrity of the frame, particularly since households are quite dynamic throughout most of the drainage. Because the inference space of the sample is strictly limited to the collection of households from which it is drawn, it is imperative that the list be as accurate and complete as possible. Other methods of maintaining the list may be more efficient, e.g., visiting each community prior to drawing the sample and utilizing other sources of household lists, such as telephone books and utility databases.

The quality of the harvest estimate is dependent upon the ability of the surveyors to obtain complete and accurate data. This requires that individuals contacted accurately recall the number of each species harvested throughout the season. Although some individuals undoubtedly remember the number of salmon harvested quite accurately, others may only be able to provide approximations. The most effective way to minimize this problem is to encourage subsistence fishermen to accurately record harvests as they occur, perhaps through continued use of the "catch calendars" provided by the department (Holder and Hamner 1991). In addition, species identification may be a concern in some portions of the drainage. For example, fishermen in the Upper Yukon Area use the term "silver" to refer to any bright, silvery fish; however, both fall chum and coho remain bright late into the season. This problem must be addressed through concerted efforts to educate subsistence fishermen concerning species identification and train surveyors in the varied use of common species names within the drainage.

The District 4 summer chum salmon commercial fishery poses a special problem. This fishery is predominately a roe fishery, and managers believe that a large portion of the males and the carcasses of females harvested in the commercial fishery are used for subsistence purposes, particularly for dog food. Although used for subsistence, these fish are considered part of the commercial harvest. For that reason, interviewers attempted to collect information only on those fish harvested in subsistence fisheries. However, the degree to which they were successful is unknown, and it is likely that some fishermen

reported commercially harvested fish as being harvested in a subsistence fishery. As a result, estimates of District 4 subsistence salmon harvests are most likely positively biased.

Estimates of subsistence salmon harvests presented in this report are not strictly comparable to estimates obtained in previous years, for a number of reasons. Commercially harvested fish retained for subsistence purposes were included in the estimates of subsistence harvests prior to 1988. Also, surveys were conducted earlier in previous years and undoubtedly provided incomplete information regarding coho harvests because coho migrations continued beyond the survey period. Finally, the sampling design has changed periodically throughout the history of data collection activities (Brannian and Gnath 1988; Holder and Hamner 1991).

A final problem related to the quality of the harvest estimate derives from the fact that only 85.5% of the households sampled were actually contacted. The nonrespondents were not dealt with in any systematic manner. Rather, the collection of households contacted was assumed to be a stratified random sample. If the probability of a household being contacted is correlated with the number of salmon harvested by the household, the estimation procedure is biased. For example, households that are on the household list but do not physically exist can harvest no salmon and have no probability of being contacted. Similarly, households that tend to utilize natural resources heavily may be home less frequently and may be more difficult to contact than other households. The degree to which nonrespondents may have introduced bias is not known. In any case, estimates of variances are negatively biased. Methods to increase contact rates, such as spending more time in the communities and increasing the effort to make contacts via the telephone and postal system, should be investigated and implemented.

The Sampling Design

The current stratification system appears to be functional. Table 17 indicates that the definitions of the use categories are somewhat stable. Although some discrepancies between assigned use categories and 1991 harvest levels are apparent, the integrity of the design is not threatened. Because attempts are made to census households in the medium- and heavy-use groups, the most serious threat to the efficiency of the design would be if households that harvested a large number of salmon were placed in the zero- or light-use groups. Table 17 indicates that was not a substantial problem in 1991. Although the correlation coefficients presented in Table 18 are not large, the correlations generally do not decrease as the number of years separating harvests increase. The low correlations and the relative stability of the use categories suggest that harvests fluctuate but do not change radically between years. These observations suggest that households should be placed into relatively gross use categories based upon average annual harvest, as is the current procedure, rather than the most recent harvest information.

The current stratification system appears to increase the probability of sampling households that harvest large numbers of salmon. Figures 9 to 12, which graphically present the mean household harvests of chinook, summer-run chum, fall-run chum, and coho salmon by use group, indicate that the mean harvest of each species generally increases as the level of use increases from zero-use to heavy-use. In addition, the mean harvests of households in the unknown-use group are relatively small for all species, which

indicates that this use group contains few households that harvest large numbers of salmon. Although the current design might be improved, the primary objectives of stratification are being achieved.

The current stratification system was adopted in 1990 (Holder and Hamner 1991). At that time, the definitions of the use categories were established based upon the personal knowledge of the fishery managers. The current definitions appear to provide relatively stable strata (Tables 17, 18). However, as more information concerning the variability of household harvests becomes available, the definitions could undoubtedly be improved. The definitions should be established to provide optimum stability between years and to isolate households having similar patterns of subsistence salmon use. If the current design continues to be implemented, multiple-year data on a sufficient number of households will support a rigorous investigation into selecting improved definitions for the use categories.

Some improvements to the current use categories could be made prior to 1992 data collection activities. The large number of households in the unknown-use category reduces the efficiency the sampling design. Ideally, this category should be extremely small and should be censused each year. A directed effort is needed to place all these households in one of the other use categories prior to the 1992 data collection activities. In addition, if the medium- and heavy-use categories continue to be sampled at the same level in future years, they should be combined into a single-use category.

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TABLES

AND

FIGURES

Table 1. Reported numbers of subsistence salmon harvested under the authority of a permit, by community of residence. Information from permits returned after 20 April, 1992 is not included.

Community	Permits			Reported Harvest			
	Number Issued	Number Returned	Percent Returned	Chinook	Summer-Run Chum	Fall-Run Chum	Coho
Central	7	7	100.0	151	0	73	0
Chicken	2	2	100.0	0	0	0	0
Circle	22	21	95.5	1,720	51	6,340	5
Delta Junction ^a	15	9	60.0	0	0	46	3
Eagle	35	35	100.0	1,193	607	7,985	0
Fairbanks NSB	200	190	95.0	1,360	2,164	3,693	2,509
Healy	7	7	100.0	0	0	2,059	1,987
Manley	30	27	90.0	518	1,729	13,243	6,361
Minto	34	26	76.5	134	748	5,276	526
Nenana	49	47	95.9	1,654	1,499	17,932	10,171
Tok	8	8	100.0	139	19	101	12
Other ^b	14	12	85.7	66	10	241	12
Total	423	391	92.4	6,780	6,827	56,989	21,586

^a Does not include a reported harvest of 741 post-spawned fall-run chum salmon.

^b Includes information from permits issued to residents of Coldfoot, Dot Lake, Koyukuk, Northway, Paxson, Tanacross, and Valdez.

Table 2. Yukon River communities and dates communities were surveyed for subsistence salmon use.

Community	Survey Date(s)
Sheldon's Point	8/31
Alakanuk	8/29-8/30, 9/6
Emmonak	8/29, 9/3, 9/5-9/6
Kotlik	9/4
Mountain Village	9/7-9/8
Pitkas Point	9/9
St. Mary's	9/9
Pilot Station	9/10
Marshall	9/10
Russian Mission	9/11
Holy Cross	9/11
Anvik	10/15-10/16
Grayling	10/16-10/17
Shageluk	10/17
Kaltag	10/8
Nulato	10/9
Koyukuk	10/10
Galena	10/3, 10/7-10/11
Ruby	10/10-10/11
Huslia	10/1-10/2
Hughes	10/1
Allakaket	10/14
Alatna	10/14
Bettles	10/15
Tanana	11/4-11/5
Rampart	10/30-10/31
Stevens Village	10/30
Beaver	10/29
Birch Creek	10/25
Fort Yukon	10/23-10/25
Venetie	10/21
Chalkyitsik	10/23

Table 3. The total number of households (*N*), the sample size (*n*), and the percentage of the sampled households that were contacted (*C*), by stratum with community, use category, district, and Yukon River totals.

Community	Unknown Use			Zero Use			Light Use			Medium Use			Heavy Use			Community Total		
	<i>N</i>	<i>n</i>	<i>C</i>	<i>N</i>	<i>n</i>	<i>C</i>	<i>N</i>	<i>n</i>	<i>C</i>	<i>N</i>	<i>n</i>	<i>C</i>	<i>N</i>	<i>n</i>	<i>C</i>	<i>N</i>	<i>n</i>	<i>C</i>
Alakanuk	19	5	80.0	35	5	100.0	54	16	100.0	12	12	91.7	1	1	0.0	121	39	92.3
Emmonak	28	6	83.3	54	16	75.0	40	20	90.0	13	13	100.0	3	3	100.0	138	58	87.9
Kotlik	22	5	60.0	23	5	60.0	35	11	90.9	15	15	86.7	5	5	100.0	100	41	82.9
Sheldon's Point	1	1	100.0	2	2	100.0	9	9	77.8	9	9	77.8	0	-	-	21	21	81.0
District 1 Total	70	17	76.5	114	28	78.6	138	56	91.1	49	49	89.8	9	9	88.9	380	159	86.8
Marshall	2	2	100.0	13	5	80.0	32	10	100.0	10	10	90.0	2	2	100.0	59	29	93.1
Mountain Village	8	5	40.0	46	5	80.0	51	15	80.0	23	23	100.0	2	2	100.0	130	50	86.0
Pilot Station	8	5	40.0	42	13	84.6	45	23	87.0	3	3	100.0	2	2	100.0	100	46	82.6
Pitkas Point	1	1	100.0	7	7	71.4	5	5	80.0	8	8	100.0	0	-	-	21	21	85.7
St. Mary's	2	2	100.0	20	5	80.0	25	8	100.0	21	21	85.7	5	5	100.0	73	41	90.2
District 2 Total	21	15	60.0	128	35	80.0	158	61	88.5	65	65	93.8	11	11	100.0	383	187	87.2
Holy Cross	1	1	0.0	15	5	100.0	22	11	90.9	6	6	100.0	2	2	50.0	46	25	88.0
Russian Mission	1	1	100.0	18	5	100.0	20	6	100.0	11	11	100.0	1	1	100.0	51	24	100.0
District 3 Total	2	2	50.0	33	10	100.0	42	17	94.1	17	17	100.0	3	3	66.7	97	49	93.9
Alatna	4	4	75.0	3	3	100.0	3	3	66.7	3	3	100.0	0	-	-	13	13	84.6
Allakaket	4	4	75.0	17	5	100.0	11	5	80.0	9	9	88.9	2	2	100.0	43	25	88.0
Anvik	2	2	100.0	14	5	80.0	5	5	60.0	7	7	100.0	3	3	100.0	31	22	86.4
Bettles	3	3	66.7	19	19	57.9	2	2	0.0	0	-	-	0	-	-	24	24	54.2
Galena	43	9	77.8	72	7	71.4	45	14	100.0	14	14	92.9	5	5	100.0	179	49	89.8
Grayling	4	4	75.0	19	5	80.0	8	5	100.0	14	14	92.9	7	7	100.0	52	35	91.4
Hughes	2	2	100.0	4	4	100.0	6	6	83.3	6	6	83.3	0	-	-	18	18	88.9
Huslia	12	5	40.0	27	5	80.0	8	5	80.0	8	8	87.5	6	6	100.0	61	29	79.3
Kaltag	13	5	60.0	12	5	80.0	13	5	100.0	14	14	100.0	2	2	100.0	54	31	90.3
Koyukuk	16	5	80.0	16	5	100.0	6	5	100.0	3	3	100.0	1	1	100.0	42	19	94.7
Nulato	26	5	20.0	34	5	100.0	15	5	100.0	12	12	100.0	3	3	100.0	90	30	86.7
Ruby	13	5	80.0	26	5	80.0	12	5	60.0	11	11	90.9	4	4	100.0	66	30	83.3
Shageluk	1	1	0.0	8	5	80.0	7	5	80.0	4	4	100.0	3	3	100.0	23	18	83.3
District 4 Total	143	54	66.7	271	78	79.5	141	70	84.3	105	105	94.3	36	36	100.0	696	343	85.1
Beaver	9	9	66.7	11	11	100.0	8	8	75.0	6	6	100.0	1	1	100.0	35	35	85.7
Birch Creek	6	6	50.0	7	7	71.4	0	-	-	0	-	-	0	-	-	13	13	61.5
Chalkyitsik	15	15	60.0	11	11	100.0	2	2	100.0	3	3	100.0	1	1	100.0	32	32	81.3
Fort Yukon	73	15	73.3	96	10	80.0	24	7	85.7	20	20	95.0	9	9	66.7	222	61	82.0
Rampart	3	3	100.0	9	9	77.8	3	3	100.0	5	5	100.0	5	5	80.0	25	25	88.0
Stevens Village	3	3	66.7	11	11	81.8	5	5	100.0	7	7	85.7	4	4	100.0	30	30	86.7
Tanana	20	5	60.0	66	20	90.0	7	5	80.0	7	7	100.0	22	22	81.8	122	59	84.7
Venetie	27	5	40.0	20	5	100.0	7	5	80.0	7	7	85.7	2	2	100.0	63	24	79.2
District 5 Total	156	61	63.9	231	84	88.1	56	35	85.7	55	55	94.5	44	44	81.8	542	279	82.8
Yukon River Totals	392	149	65.8	777	235	83.4	535	239	87.9	291	291	93.8	103	103	90.3	2,098	1,017	85.5

Table 4. The estimated proportion of households located in nonpermit communities participating in Yukon River salmon subsistence fisheries, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Prop.	SE	<i>N</i>	<i>n</i>	Prop.	SE	<i>N</i>	<i>n</i>	Prop.	SE	<i>N</i>	<i>n</i>	Prop.	SE	<i>N</i>	<i>n</i>	Prop.	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	0.5	0.2	35	5	0.0	0.0	54	16	0.7	0.0	12	11	1.0	0.0	1	0	-	-	121	36	62	6.6
Emmonak	28	5	0.2	0.1	54	12	0.2	0.1	40	18	0.4	0.0	13	13	0.6	0.0	3	3	0.6	0.0	138	51	47	8.7
Kotlik	22	3	0.3	0.3	23	3	0.3	0.3	35	10	0.5	0.1	15	13	0.8	0.0	5	5	1.0	0.0	100	34	50	10.7
Sheldon's Point	1	1	1.0	0.0	2	2	1.0	0.0	9	7	0.4	0.0	9	7	1.0	0.0	0	0	-	-	21	17	15	0.5
District 1 Total	70	13	0.3	0.1	114	22	0.2	0.0	138	51	0.5	0.0	49	44	0.8	0.0	9	8	0.7	0.0	380	138	175	15.3
Marshall	2	2	1.0	0.0	13	4	0.2	0.2	32	10	0.7	0.1	10	9	0.8	0.0	2	2	0.0	0.0	59	27	36	4.6
Mountain Village	8	2	0.5	0.4	46	4	0.0	0.0	51	12	0.5	0.1	23	23	0.7	0.0	2	2	1.0	0.0	130	43	53	7.1
Pilot Station	8	2	0.0	0.0	42	11	0.2	0.1	45	20	0.6	0.0	3	3	0.3	0.0	2	2	0.5	0.0	100	38	40	6.1
Pitkas Point	1	1	1.0	0.0	7	5	0.2	0.1	5	4	0.2	0.1	8	8	1.0	0.0	0	0	-	-	21	18	11	0.5
St. Mary's	2	2	0.5	0.0	20	4	0.2	0.2	25	8	0.7	0.1	21	18	0.9	0.0	5	5	1.0	0.0	73	37	49	5.6
District 2 Total	21	9	0.3	0.1	128	28	0.1	0.0	158	54	0.6	0.0	65	61	0.8	0.0	11	11	0.7	0.0	383	163	191	12.2
Holy Cross	1	0	-	-	15	5	0.0	0.0	22	10	0.5	0.1	6	6	1.0	0.0	2	1	1.0	0.5	46	22	19	2.6
Russian Mission	1	1	1.0	0.0	18	5	0.0	0.0	20	6	0.6	0.1	11	11	0.7	0.0	1	1	0.0	0.0	51	24	22	3.1
District 3 Total	2	1	0.5	0.0	33	10	0.0	0.0	42	16	0.5	0.1	17	17	0.8	0.0	3	2	0.6	0.3	97	46	41	4.1
Alatna	4	3	0.6	0.1	3	3	0.0	0.0	3	2	1.0	0.0	3	3	0.6	0.0	0	0	-	-	13	11	7	0.5
Allakaket	4	3	0.0	0.0	17	5	0.2	0.1	11	4	0.7	0.1	9	8	0.6	0.0	2	2	1.0	0.0	43	22	19	3.6
Anvik	2	2	0.5	0.0	14	4	0.5	0.2	5	3	0.6	0.2	7	7	0.8	0.0	3	3	1.0	0.0	31	19	20	3.6
Bettles	3	2	0.5	0.2	19	11	0.0	0.0	2	0	-	-	0	0	-	-	0	0	-	-	24	13	3	1.0
Galena	43	7	0.1	0.1	72	5	0.0	0.0	45	14	0.5	0.1	14	13	0.9	0.0	5	5	0.6	0.0	179	44	47	7.1
Grayling	4	3	0.0	0.0	19	4	0.2	0.2	8	5	0.6	0.1	14	13	0.8	0.0	7	7	0.8	0.0	52	32	27	4.1
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	0.4	0.1	6	5	1.0	0.0	0	0	-	-	18	16	8	0.5
Huslia	12	2	0.0	0.0	27	4	0.2	0.2	8	4	0.0	0.0	8	7	0.7	0.0	6	6	0.6	0.0	61	23	16	6.1
Kaltag	13	3	0.3	0.2	12	4	0.0	0.0	13	5	0.8	0.1	14	14	0.7	0.0	2	2	1.0	0.0	54	28	26	4.1
Koyukuk	16	4	0.2	0.2	16	5	0.4	0.2	6	5	0.6	0.1	3	3	0.6	0.0	1	1	1.0	0.0	42	18	17	4.6
Nulato	26	1	0.0	0.4	34	5	0.4	0.2	15	5	0.8	0.1	12	12	0.9	0.0	3	3	1.0	0.0	90	26	39	13.3
Ruby	13	4	0.2	0.2	26	4	0.0	0.0	12	3	0.3	0.2	11	10	0.9	0.0	4	4	0.7	0.0	66	25	20	4.1
Shageluk	1	0	-	-	8	4	0.0	0.0	7	4	0.5	0.1	4	4	0.7	0.0	3	3	1.0	0.0	23	15	9	1.0
District 4 Total	143	36	0.1	0.0	271	62	0.1	0.0	141	59	0.5	0.0	105	99	0.8	0.0	36	36	0.8	0.0	696	292	263	19.4
Beaver	9	6	0.0	0.0	11	11	0.1	0.0	8	6	0.5	0.1	6	6	0.6	0.0	1	1	0.0	0.0	35	30	10	0.5
Birch Creek	6	3	0.0	0.0	7	5	0.4	0.1	0	0	-	-	0	0	-	-	0	0	-	-	13	8	2	0.5
Chalkyitsik	15	9	0.0	0.0	11	11	0.0	0.0	2	2	0.0	0.0	3	3	0.3	0.0	1	1	1.0	0.0	32	26	3	0.0
Fort Yukon	73	11	0.2	0.1	96	8	0.0	0.0	24	6	0.3	0.1	20	19	0.6	0.0	9	6	0.6	0.1	222	50	46	10.2
Rampart	3	3	0.0	0.0	9	7	0.0	0.0	3	3	0.6	0.0	5	5	0.8	0.0	5	4	1.0	0.0	25	22	11	0.0
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	0.4	0.0	7	6	0.8	0.0	4	4	0.5	0.0	30	26	9	0.0
Tanana	20	3	0.3	0.3	66	18	0.0	0.0	7	4	0.5	0.1	7	7	0.7	0.0	22	18	0.8	0.0	122	50	34	6.1
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	0.2	0.1	7	6	0.6	0.0	2	2	0.5	0.0	63	19	7	1.0
District 5 Total	156	39	0.1	0.0	231	74	0.0	0.0	56	30	0.3	0.0	55	52	0.6	0.0	44	36	0.7	0.0	542	231	125	12.2
Yukon Total	392	98	0.2	0.0	777	196	0.1	0.0	535	210	0.5	0.0	291	273	0.8	0.0	103	93	0.7	0.0	2,098	870	798	30.6

Table 5. The use of fishing gear reported by households located in nonpermit communities that participated in Yukon River salmon subsistence fisheries.

Community	Number Households	Number Contacted	Subsistence Fished	Gear-type Used ^a		
				Set Gillnets	Drift Gillnets	Fish Wheels
Alakanuk	121	36 (29.7%)	25 (69.4%)	23 (92.0%)	2 (8.0%)	0 (0.0%)
Sheldon's Point	21	17 (80.9%)	13 (76.4%)	12 (92.3%)	1 (7.6%)	0 (0.0%)
Emmonak	138	51 (36.9%)	23 (45.0%)	21 (91.3%)	2 (8.6%)	0 (0.0%)
Kotlik	100	34 (34.0%)	23 (67.6%)	21 (91.3%)	2 (8.6%)	0 (0.0%)
District 1 Total	380	138 (36.3%)	84 (60.8%)	77 (91.6%)	7 (8.3%)	0 (0.0%)
Pilot Station	100	38 (38.0%)	17 (44.7%)	2 (11.7%)	15 (88.2%)	0 (0.0%)
Mountain Village	130	43 (33.0%)	28 (65.1%)	5 (18.5%)	22 (81.4%)	0 (0.0%)
Marshall	59	27 (45.7%)	18 (66.6%)	6 (35.2%)	12 (70.5%)	0 (0.0%)
Pitkas Point	21	18 (85.7%)	11 (61.1%)	2 (18.1%)	9 (81.8%)	0 (0.0%)
St. Mary's	73	37 (50.6%)	30 (81.0%)	1 (3.4%)	29 (100.0%)	0 (0.0%)
District 2 Total	383	163 (42.5%)	104 (63.8%)	16 (15.8%)	87 (86.1%)	0 (0.0%)
Russian Mission	51	24 (47.0%)	13 (54.1%)	4 (30.7%)	9 (69.2%)	0 (0.0%)
Holy Cross	46	22 (47.8%)	12 (54.5%)	4 (33.3%)	8 (66.6%)	0 (0.0%)
District 3 Total	97	46 (47.4%)	25 (54.3%)	8 (32.0%)	17 (68.0%)	0 (0.0%)
Alatna	13	11 (84.6%)	6 (54.5%)	4 (100.0%)	0 (0.0%)	0 (0.0%)
Kaltag	54	28 (51.8%)	17 (60.7%)	5 (29.4%)	12 (70.5%)	8 (47.0%)
Hughes	18	16 (88.8%)	7 (43.7%)	7 (100.0%)	0 (0.0%)	0 (0.0%)
Galena	179	44 (24.5%)	24 (54.5%)	15 (62.5%)	2 (8.3%)	11 (45.8%)
Anvik	31	19 (61.2%)	14 (73.6%)	10 (83.3%)	1 (8.3%)	3 (25.0%)
Huslia	61	23 (37.7%)	10 (43.4%)	10 (100.0%)	0 (0.0%)	0 (0.0%)
Koyukuk	42	18 (42.8%)	9 (50.0%)	6 (66.6%)	4 (44.4%)	1 (11.1%)
Allakaket	43	22 (51.1%)	11 (50.0%)	10 (100.0%)	0 (0.0%)	0 (0.0%)
Grayling	52	32 (61.5%)	21 (65.6%)	18 (85.7%)	0 (0.0%)	3 (14.2%)
Nulato	90	26 (28.8%)	20 (76.9%)	5 (27.7%)	13 (72.2%)	3 (16.6%)
Bettles	24	13 (54.1%)	2 (15.3%)	2 (100.0%)	0 (0.0%)	0 (0.0%)
Shageluk	23	15 (65.2%)	8 (53.3%)	7 (87.5%)	1 (12.5%)	0 (0.0%)
Ruby	66	25 (37.8%)	14 (56.0%)	6 (46.1%)	1 (7.6%)	6 (46.1%)
District 4 Total	696	292 (41.9%)	163 (55.8%)	105 (67.7%)	34 (21.9%)	35 (22.5%)
Chalkyitsik	32	26 (81.2%)	3 (11.5%)	1 (100.0%)	0 (0.0%)	0 (0.0%)
Fort Yukon	222	50 (22.5%)	21 (42.0%)	11 (52.3%)	0 (0.0%)	13 (61.9%)
Birch Creek	13	8 (61.5%)	2 (25.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)
Rampart	25	22 (88.0%)	10 (45.4%)	6 (75.0%)	0 (0.0%)	4 (50.0%)
Beaver	35	30 (85.7%)	9 (30.0%)	8 (100.0%)	0 (0.0%)	1 (12.5%)
Stevens Village	30	26 (86.6%)	9 (34.6%)	9 (100.0%)	0 (0.0%)	2 (22.2%)
Tanana	122	50 (40.9%)	24 (48.0%)	11 (45.8%)	1 (4.1%)	16 (66.6%)
Venetie	63	19 (30.1%)	6 (31.5%)	6 (100.0%)	0 (0.0%)	1 (16.6%)
District 5 Total	542	231 (42.6%)	84 (36.3%)	54 (68.3%)	1 (1.2%)	37 (46.8%)
Total Yukon	2,098	870 (41.4%)	460 (52.8%)	260 (58.5%)	146 (32.8%)	72 (16.2%)

^a The total of the percentages may exceed 100% since some households reported use of more than one gear type.

Table 6.

The number of chinook salmon estimated to have been harvested by residents of nonpermit communities in Yukon River salmon subsistence fisheries, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	8.2	4.2	35	5	0.0	0.0	54	16	13.6	3.4	12	11	12.3	0.7	1	0	-	0.0	121	36	1,044	204.1
Emmonak	28	5	0.0	0.0	54	12	1.9	1.2	40	18	5.6	1.7	13	13	10.2	0.0	3	3	63.3	0.0	138	51	650	93.9
Kotlik	22	3	9.3	8.6	23	3	2.6	2.4	35	10	15.3	7.5	15	13	48.0	5.0	5	5	146.6	0.0	100	34	2,256	339.3
Sheldon's Point	1	1	0.0	0.0	2	2	18.5	0.0	9	7	6.2	1.6	9	7	39.1	5.4	0	0	-	-	21	17	445	51.5
District 1 Total	70	13	5.1	2.9	114	22	1.7	0.7	138	51	11.2	2.4	49	44	27.6	1.8	9	8	102.5	0.0	380	138	4,397	410.2
Marshall	2	2	16.0	0.0	13	4	1.0	0.8	32	10	24.7	7.8	10	9	44.2	5.1	2	2	0.0	0.0	59	27	1,277	256.1
Mountain Village	8	2	5.0	4.3	46	4	0.0	0.0	51	12	14.8	5.0	23	23	15.6	0.0	2	2	7.5	0.0	130	43	1,171	257.7
Pilot Station	8	2	0.0	0.0	42	11	16.3	11.5	45	20	35.0	7.6	3	3	16.6	0.0	2	2	52.5	0.0	100	38	2,419	595.4
Pitkas Point	1	1	30.0	0.0	7	5	2.4	1.2	5	4	5.0	2.2	8	8	72.6	0.0	0	0	-	-	21	18	652	14.3
St. Mary's	2	2	3.0	0.0	20	4	0.7	0.6	25	8	17.1	8.8	21	18	50.2	3.6	5	5	66.6	0.0	73	37	1,836	235.7
District 2 Total	21	9	5.1	1.6	128	28	5.7	3.8	158	54	22.6	3.4	65	61	38.2	1.4	11	11	41.1	0.0	383	163	7,358	736.7
Holy Cross	1	0	-	0.0	15	5	0.0	0.0	22	10	34.2	12.8	6	6	90.5	0.0	2	1	177.0	88.5	46	22	1,649	333.2
Russian Mission	1	1	22.0	0.0	18	5	0.0	0.0	20	6	35.0	13.6	11	11	57.0	0.0	1	1	0.0	0.0	51	24	1,349	271.9
District 3 Total	2	1	11.0	0.0	33	10	0.0	0.0	42	16	34.5	9.3	17	17	68.8	0.0	3	2	118.0	59.0	97	46	2,998	430.6
Alatna	4	3	0.0	0.0	3	3	0.0	0.0	3	2	0.0	0.0	3	3	1.6	0.0	0	0	-	-	13	11	5	0.0
Allakaket	4	3	0.0	0.0	17	5	0.0	0.0	11	4	7.7	4.7	9	8	36.6	5.6	2	2	16.0	0.0	43	22	446	72.4
Anvik	2	2	5.0	0.0	14	4	16.2	7.9	5	3	23.3	9.1	7	7	27.5	0.0	3	3	24.0	0.0	31	19	619	120.4
Bettles	3	2	2.5	1.4	19	11	0.4	0.2	2	0	-	0.0	0	0	-	-	0	0	-	-	24	13	16	6.6
Galena	43	7	0.4	0.3	72	5	0.0	0.0	45	14	23.7	6.6	14	13	29.6	2.2	5	5	214.2	0.0	179	44	2,574	300.5
Grayling	4	3	0.0	0.0	19	4	12.5	11.1	8	5	14.0	5.6	14	13	21.4	2.1	7	7	32.1	0.0	52	32	874	217.9
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	1.2	0.3	6	5	23.2	5.9	0	0	-	-	18	16	146	35.7
Huslia	12	2	0.0	0.0	27	4	2.0	1.8	8	4	0.0	0.0	8	7	11.2	2.7	6	6	9.0	0.0	61	23	198	54.1
Kaltag	13	3	16.0	14.0	12	4	0.0	0.0	13	5	81.6	43.2	14	14	37.0	0.0	2	2	40.0	0.0	54	28	1,866	590.8
Koyukuk	16	4	7.5	6.4	16	5	2.2	1.1	6	5	10.0	4.0	3	3	116.6	0.0	1	1	320.0	0.0	42	18	885	108.2
Nulato	26	1	0.0	9.2	34	5	30.0	17.0	15	5	10.0	4.4	12	12	83.3	0.0	3	3	110.0	0.0	90	26	2,500	630.6
Ruby	13	4	2.5	2.0	26	4	0.0	0.0	12	3	0.0	0.0	11	10	56.3	6.7	4	4	80.0	0.0	66	25	971	78.6
Shageluk	1	0	-	0.0	8	4	0.0	0.0	7	4	16.2	6.9	4	4	13.2	0.0	3	3	7.6	0.0	23	15	189	48.5
District 4 Total	143	36	2.7	2.2	271	62	5.8	2.3	141	59	19.6	4.5	105	99	38.2	1.0	36	36	70.1	0.0	696	292	11,294	963.8
Beaver	9	6	0.0	0.0	11	11	7.0	0.0	8	6	14.8	5.0	6	6	86.1	0.0	1	1	0.0	0.0	35	30	713	40.3
Birch Creek	6	3	0.0	0.0	7	5	28.0	9.7	0	0	-	-	0	0	-	-	0	0	-	-	13	8	196	68.4
Chalkyitsik	15	9	0.0	0.0	11	11	0.0	0.0	2	2	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	32	26	0	0.0
Fort Yukon	73	11	18.9	11.1	96	8	0.0	0.0	24	6	41.5	34.4	20	19	96.6	7.6	9	6	141.6	44.3	222	50	5,585	1,236.2
Rampart	3	3	0.0	0.0	9	7	0.0	0.0	3	3	43.3	0.0	5	5	94.2	0.0	5	4	77.5	14.1	25	22	988	70.9
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	57.4	0.0	7	6	200.0	24.8	4	4	87.0	0.0	30	26	2,035	173.5
Tanana	20	3	6.6	6.1	66	18	0.0	0.0	7	4	23.0	9.8	7	7	60.1	0.0	22	18	80.3	12.9	122	50	2,483	317.9
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	0.0	0.0	7	6	1.3	0.5	2	2	0.0	0.0	63	19	9	3.1
District 5 Total	156	39	9.7	5.2	231	74	1.1	0.2	56	30	30.2	14.8	55	52	86.4	4.2	44	36	85.8	11.2	542	231	12,011	1,292.3
Yukon Total	392	98	6.1	2.3	777	196	3.5	1.0	535	210	20.6	2.4	291	273	47.3	0.9	103	93	78.0	5.1	2,098	870	38,060	1,869.9

Table 7.

The number of summer-run chum salmon estimated to have been harvested by residents of nonpermit communities in Yukon River salmon subsistence fisheries, by stratum with community, use category, district, and Yukon River Totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	51.5	26.6	35	5	0.0	0.0	54	16	96.3	20.5	12	11	156.2	9.3	1	0	-	0.0	121	36	8,058	1,225.0
Emmonak	28	5	0.0	0.0	54	12	9.1	7.3	40	18	71.7	21.1	13	13	132.0	0.0	3	3	266.6	0.0	138	51	5,882	934.2
Kotlik	22	3	23.3	21.6	23	3	0.0	0.0	35	10	34.2	16.6	15	13	224.1	24.3	5	5	186.0	0.0	100	34	6,002	836.2
Sheldon's Point	1	1	30.0	0.0	2	2	112.5	0.0	9	7	45.7	11.4	9	7	173.2	20.0	0	0	-	-	21	17	2,226	207.7
District 1 Total	70	13	21.7	9.9	114	22	6.3	3.4	138	51	70.1	10.9	49	44	173.7	8.6	9	8	192.2	0.0	380	138	22,168	1,765.3
Marshall	2	2	10.0	0.0	13	4	1.0	0.8	32	10	39.2	14.2	10	9	75.5	9.0	2	2	0.0	0.0	59	27	2,042	464.3
Mountain Village	8	2	0.0	0.0	46	4	0.0	0.0	51	12	16.8	4.9	23	23	142.8	0.0	2	2	300.0	0.0	130	43	4,743	252.6
Pilot Station	8	2	0.0	0.0	42	11	22.2	15.6	45	20	54.4	13.7	3	3	20.0	0.0	2	2	102.5	0.0	100	38	3,650	902.0
Pitkas Point	1	1	200.0	0.0	7	5	8.0	4.2	5	4	2.5	1.1	8	8	148.0	0.0	0	0	-	-	21	18	1,452	30.1
St. Mary's	2	2	6.0	0.0	20	4	1.5	1.3	25	8	53.8	22.4	21	18	208.2	11.4	5	5	414.2	0.0	73	37	7,832	611.2
District 2 Total	21	9	11.0	0.0	128	28	8.0	5.1	158	54	37.4	6.2	65	61	148.5	3.9	11	11	261.4	0.0	383	163	19,722	1,211.7
Holy Cross	1	0	-	0.0	15	5	0.0	0.0	22	10	1.3	0.9	6	6	78.6	0.0	2	1	264.0	132.0	46	22	1,028	264.8
Russian Mission	1	1	100.0	0.0	18	5	0.0	0.0	20	6	10.3	4.5	11	11	48.2	0.0	1	1	0.0	0.0	51	24	837	90.3
District 3 Total	2	1	50.0	0.0	33	10	0.0	0.0	42	16	5.6	2.2	17	17	59.0	0.0	3	2	176.0	88.0	97	46	1,866	279.6
Alatna	4	3	58.0	18.9	3	3	0.0	0.0	3	2	97.5	30.3	3	3	146.0	0.0	0	0	-	-	13	11	962	117.9
Allakaket	4	3	0.0	0.0	17	5	10.0	8.4	11	4	168.7	61.6	9	8	175.7	31.1	2	21	421.5	0.0	43	22	6,451	747.4
Anvik	2	2	0.0	0.0	14	4	0.0	0.0	5	3	8.3	5.2	7	7	112.1	0.0	3	3	16.6	0.0	31	19	876	26.0
Bettles	3	2	37.5	21.6	19	11	2.2	1.4	2	0	-	0.0	0	0	-	-	0	0	-	-	24	13	155	70.4
Galena	43	7	4.4	4.0	72	5	0.0	0.0	45	14	9.0	5.8	14	13	101.2	20.2	5	5	296.2	0.0	179	44	3,493	425.5
Grayling	4	3	0.0	0.0	19	4	0.0	0.0	8	5	180.0	110.2	14	13	94.0	12.4	7	7	762.4	0.0	52	32	8,094	898.5
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	18.2	4.6	6	5	191.4	42.6	0	0	-	-	18	16	1,257	257.1
Huslia	12	2	0.0	0.0	27	4	75.0	69.2	8	4	0.0	0.0	8	7	228.5	31.5	6	6	667.3	0.0	61	23	7,857	1,885.7
Kaltag	13	3	0.0	0.0	12	4	0.0	0.0	13	5	161.0	125.3	14	14	13.8	0.0	2	2	0.0	0.0	54	28	2,287	1,629.1
Koyukuk	16	4	125.0	108.2	16	5	10.0	8.2	6	5	24.4	7.8	3	3	6.6	0.0	1	1	0.0	0.0	42	18	2,326	1,737.8
Nulato	26	1	0.0	84.2	34	5	0.0	0.0	15	5	3.6	2.3	12	12	8.7	0.0	3	3	0.0	0.0	90	26	159	2,190.3
Ruby	13	4	0.0	0.0	26	4	0.0	0.0	12	3	0.0	0.0	11	10	5.2	1.5	4	4	323.7	0.0	66	25	1,352	16.8
Shageluk	1	0	-	0.0	8	4	0.0	0.0	7	4	92.5	35.1	4	4	100.0	0.0	3	3	877.6	0.0	23	15	3,680	245.9
District 4 Total	143	36	17.7	19.5	271	62	8.8	6.9	141	59	50.2	14.2	105	99	88.4	5.3	36	36	490.0	0.0	696	292	38,953	3,965.3
Beaver	9	6	0.0	0.0	11	11	1.2	0.0	8	6	285.8	141.4	6	6	9.1	0.0	1	1	0.0	0.0	35	30	2,355	1,131.1
Birch Creek	6	3	0.0	0.0	7	5	0.0	0.0	0	0	-	-	0	0	-	-	0	0	-	-	13	8	0	0.0
Chalkyitsik	15	9	0.0	0.0	11	11	4.5	0.0	2	2	0.0	0.0	3	3	50.0	0.0	1	1	300.0	0.0	32	26	500	0.0
Fort Yukon	73	11	68.1	62.8	96	8	0.0	0.0	24	6	50.0	43.3	20	19	143.6	14.7	9	6	325.0	138.1	222	50	11,974	4,873.5
Rampart	3	3	0.0	0.0	9	7	0.0	0.0	3	3	0.0	0.0	5	5	4.0	0.0	5	4	0.0	0.0	25	22	20	0.0
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	10.0	0.0	7	6	170.0	62.7	4	4	36.2	0.0	30	26	1,385	438.8
Tanana	20	3	0.0	0.0	66	18	0.0	0.0	7	4	0.0	0.0	7	7	0.0	0.0	22	18	126.3	24.5	122	50	2,779	540.3
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	62.5	40.9	7	6	322.3	64.3	2	2	350.0	0.0	63	19	3,393	533.2
District 5 Total	156	39	31.9	29.4	231	74	0.2	0.0	56	30	70.9	27.9	55	52	118.9	12.6	44	36	155.6	30.8	542	231	22,408	5,079.6
Yukon Total	392	98	23.8	13.8	777	196	5.4	2.6	535	210	50.2	5.8	291	273	120.3	3.5	103	93	287.6	13.4	2,098	870	105,119	6,796.4

Table 8.

The number of fall-run chum salmon estimated to have been harvested by residents of nonpermit communities in Yukon River salmon subsistence fisheries, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	0.0	0.0	35	5	0.0	0.0	54	16	1.3	1.0	12	11	10.1	1.8	1	0	-	0.0	121	36	193	60.7
Emmonak	28	5	13.6	12.3	54	12	0.0	0.0	40	18	0.6	0.4	13	13	0.0	0.0	3	3	0.0	0.0	138	51	407	345.4
Kotlik	22	3	23.6	21.9	23	3	0.0	0.0	35	10	0.0	0.0	15	13	3.7	0.8	5	5	40.0	0.0	100	34	777	483.7
Sheldon's Point	1	1	0.0	0.0	2	2	0.0	0.0	9	7	7.1	3.3	9	7	2.2	1.0	0	0	-	-	21	17	84	31.6
District 1 Total	70	13	12.8	8.4	114	22	0.0	0.0	138	51	1.1	0.4	49	44	4.0	0.5	9	8	22.2	0.0	380	138	1,462	598.5
Marshall	2	2	4.5	0.0	13	4	0.0	0.0	32	10	6.3	4.3	10	9	68.1	10.7	2	2	0.0	0.0	59	27	891	176.5
Mountain Village	8	2	0.0	0.0	46	4	0.0	0.0	51	12	8.0	7.0	23	23	42.6	0.0	2	2	40.0	0.0	130	43	1,473	360.2
Pilot Station	8	2	0.0	0.0	42	11	1.3	1.1	45	20	3.8	1.8	3	3	0.0	0.0	2	2	164.5	0.0	100	38	557	94.9
Pitkas Point	1	1	0.0	0.0	7	5	0.0	0.0	5	4	0.0	0.0	8	8	76.2	0.0	0	0	-	-	21	18	610	0.0
St. Mary's	2	2	0.0	0.0	20	4	0.0	0.0	25	8	32.5	18.1	21	18	24.4	3.7	5	5	53.4	0.0	73	37	1,592	460.2
District 2 Total	21	9	0.4	0.0	128	28	0.4	0.3	158	54	10.1	3.8	65	61	42.8	2.0	11	11	61.4	0.0	383	163	5,125	618.4
Holy Cross	1	0	-	0.0	15	5	0.0	0.0	22	10	0.0	0.0	6	6	31.6	0.0	2	1	0.0	0.0	46	22	190	0.0
Russian Mission	1	1	90.0	0.0	18	5	0.0	0.0	20	6	0.6	0.5	11	11	29.2	0.0	1	1	0.0	0.0	51	24	425	10.7
District 3 Total	2	1	45.0	0.0	33	10	0.0	0.0	42	16	0.3	0.2	17	17	30.1	0.0	3	2	0.0	0.0	97	46	615	10.7
Alatna	4	3	0.0	0.0	3	3	0.0	0.0	3	2	0.0	0.0	3	3	12.6	0.0	0	0	-	-	13	11	38	0.0
Allakaket	4	3	0.0	0.0	17	5	0.0	0.0	11	4	15.0	11.9	9	8	8.1	2.7	2	2	118.5	0.0	43	22	475	133.7
Anvik	2	2	7.5	0.0	14	4	0.0	0.0	5	3	33.3	11.1	7	7	25.8	0.0	3	3	30.0	0.0	31	19	452	55.6
Bettles	3	2	0.0	0.0	19	11	0.0	0.0	2	0	-	0.0	0	0	-	-	0	0	-	-	24	13	0	0.0
Galena	43	7	0.0	0.0	72	5	0.0	0.0	45	14	8.5	3.6	14	13	285.7	43.5	5	5	227.8	0.0	179	44	5,525	631.6
Grayling	4	3	0.0	0.0	19	4	75.0	66.6	8	5	94.0	29.2	14	13	32.8	2.8	7	7	140.0	0.0	52	32	3,616	1,287.8
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	0.0	0.0	6	5	45.0	11.9	0	0	-	-	18	16	270	71.9
Huslia	12	2	0.0	0.0	27	4	3.7	3.4	8	4	0.0	0.0	8	7	10.0	2.5	6	6	38.3	0.0	61	23	411	95.4
Kaltag	13	3	10.0	8.7	12	4	0.0	0.0	13	5	160.0	72.7	14	14	30.2	0.0	2	2	100.0	0.0	54	28	2,834	952.6
Koyukuk	16	4	37.5	32.4	16	5	10.0	8.2	6	5	43.6	10.3	3	3	80.0	0.0	1	1	1,500.0	0.0	42	18	2,761	539.8
Nulato	26	1	0.0	24.9	34	5	10.0	9.2	15	5	10.0	5.0	12	12	66.4	0.0	3	3	116.6	0.0	90	26	1,637	723.0
Ruby	13	4	0.0	0.0	26	4	0.0	0.0	12	3	16.6	14.4	11	10	103.4	23.6	4	4	379.7	0.0	66	25	2,856	312.2
Shageluk	1	0	-	0.0	8	4	0.0	0.0	7	4	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	23	15	0	0.0
District 4 Total	143	36	5.2	5.8	271	62	7.4	4.8	141	59	29.5	7.2	105	99	73.3	6.3	36	36	173.4	0.0	696	292	20,878	1,978.1
Beaver	9	6	0.0	0.0	11	11	0.3	0.0	8	6	0.3	0.1	6	6	0.1	0.0	1	1	0.0	0.0	35	30	7	1.0
Birch Creek	6	3	0.0	0.0	7	5	0.0	0.0	0	0	-	-	0	0	-	-	0	0	-	-	13	8	0	0.0
Chalkyitsik	15	9	0.0	0.0	11	11	0.0	0.0	2	2	0.0	0.0	3	3	0.0	0.0	1	1	100.0	0.0	32	26	100	0.0
Fort Yukon	73	11	77.2	62.5	96	8	0.0	0.0	24	6	0.8	0.7	20	19	69.0	5.3	9	6	47.3	23.5	222	50	7,467	4,572.4
Rampart	3	3	0.0	0.0	9	7	0.0	0.0	3	3	16.6	0.0	5	5	57.8	0.0	5	4	1,092.5	391.3	25	22	5,801	1,956.6
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	0.0	0.0	7	6	50.0	18.8	4	4	532.7	0.0	30	26	2,481	132.1
Tanana	20	3	133.3	122.9	66	18	0.0	0.0	7	4	0.0	0.0	7	7	46.4	0.0	22	18	1,721.6	145.1	122	50	40,868	4,029.6
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	0.0	0.0	7	6	108.3	37.2	2	2	0.0	0.0	63	19	758	260.7
District 5 Total	156	39	53.2	33.2	231	74	0.0	0.0	56	30	1.2	0.3	55	52	56.4	5.6	44	36	1,045.3	85.2	542	231	57,484	6,407.7
Yukon Total	392	98	25.6	13.4	777	196	2.6	1.6	535	210	11.2	2.2	291	273	49.1	2.5	103	93	515.7	36.4	2,098	870	85,566	6,761.2

Table 9.

The number of coho salmon estimated to have been harvested by residents of nonpermit communities in Yukon River salmon subsistence fisheries, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	0.0	0.0	35	5	0.0	0.0	54	16	4.5	3.6	12	11	12.3	1.5	1	0	-	-	121	36	391	198.5
Emmonak	28	5	0.0	0.0	54	12	0.0	0.0	40	18	0.9	0.4	13	13	0.2	0.0	3	3	0.0	0.0	138	51	40	19.4
Kotlik	22	3	1.0	0.9	23	3	0.0	0.0	35	10	0.0	0.0	15	13	1.6	0.3	5	5	40.0	0.0	100	34	247	20.9
Sheldon's Point	1	1	0.0	0.0	2	2	1.0	0.0	9	7	1.4	0.6	9	7	2.2	1.0	0	0	-	-	21	17	35	11.2
District 1 Total	70	13	0.3	0.2	114	22	0.0	0.0	138	51	2.1	1.4	49	44	4.0	0.4	9	8	22.2	0.0	380	138	714	201.0
Marshall	2	2	16.5	0.0	13	4	0.0	0.0	32	10	0.4	0.3	10	9	21.3	5.1	2	2	0.0	0.0	59	27	259	52.6
Mountain Village	8	2	0.0	0.0	46	4	0.0	0.0	51	12	0.0	0.0	23	23	37.7	0.0	2	2	0.0	0.0	130	43	868	0.0
Pilot Station	8	2	0.0	0.0	42	11	0.0	0.0	45	20	0.4	0.2	3	3	0.0	0.0	2	2	149.5	0.0	100	38	319	10.2
Pitkas Point	1	1	0.0	0.0	7	5	0.0	0.0	5	4	0.0	0.0	8	8	43.3	0.0	0	0	-	-	21	18	347	0.0
St. Mary's	2	2	0.0	0.0	20	4	0.0	0.0	25	8	17.1	8.0	21	18	31.5	5.7	5	5	36.2	0.0	73	37	1,270	233.2
District 2 Total	21	9	1.5	0.0	128	28	0.0	0.0	158	54	2.9	1.2	65	61	32.1	2.0	11	11	43.6	0.0	383	163	3,064	239.3
Holy Cross	1	0	-	-	15	5	0.0	0.0	22	10	1.0	0.7	6	6	49.3	0.0	2	1	313.0	156.5	46	22	944	313.3
Russian Mission	1	1	30.0	0.0	18	5	0.0	0.0	20	6	9.1	7.6	11	11	16.6	0.0	1	1	0.0	0.0	51	24	396	153.1
District 3 Total	2	1	15.0	0.0	33	10	0.0	0.0	42	16	4.8	3.6	17	17	28.1	0.0	3	2	208.6	104.3	97	46	1,340	348.5
Alatna	4	3	0.0	0.0	3	3	0.0	0.0	3	2	0.0	0.0	3	3	27.6	0.0	0	0	-	-	13	11	83	0.0
Allakaket	4	3	0.0	0.0	17	5	0.0	0.0	11	4	0.0	0.0	9	8	0.0	0.0	2	2	12.5	0.0	43	22	25	0.0
Anvik	2	2	2.5	0.0	14	4	0.0	0.0	5	3	0.0	0.0	7	7	44.5	0.0	3	3	10.0	0.0	31	19	347	0.0
Bettles	3	2	0.0	0.0	19	11	0.0	0.0	2	0	-	-	0	0	-	-	0	0	-	-	24	13	0	0.0
Galena	43	7	0.0	0.0	72	5	0.0	0.0	45	14	2.1	1.2	14	13	23.3	2.8	5	5	0.0	0.0	179	44	422	67.3
Grayling	4	3	0.0	0.0	19	4	62.5	55.5	8	5	0.0	0.0	14	13	5.0	1.0	7	7	15.1	0.0	52	32	1,363	1,055.1
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	0.0	0.0	6	5	1.6	0.5	0	0	-	-	18	16	9	3.1
Huslia	12	2	0.0	0.0	27	4	1.5	1.3	8	4	0.0	0.0	8	7	0.0	0.0	6	6	18.3	0.0	61	23	150	37.2
Kaltag	13	3	0.0	0.0	12	4	0.0	0.0	13	5	85.0	61.8	14	14	10.7	0.0	2	2	2.5	0.0	54	28	1,260	803.6
Koyukuk	16	4	18.7	16.2	16	5	0.4	0.3	6	5	0.2	0.0	3	3	0.0	0.0	1	1	0.0	0.0	42	18	307	259.7
Nulato	26	1	0.0	12.2	34	5	0.8	0.7	15	5	0.6	0.4	12	12	2.4	0.0	3	3	3.3	0.0	90	26	75	319.4
Ruby	13	4	0.0	0.0	26	4	0.0	0.0	12	3	0.0	0.0	11	10	1.0	0.3	4	4	99.7	0.0	66	25	410	3.1
Shageluk	1	0	-	-	8	4	0.0	0.0	7	4	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	23	15	0	0.0
District 4 Total	143	36	2.1	2.8	271	62	4.6	3.8	141	59	8.5	5.7	105	99	9.4	0.4	36	36	19.0	0.0	696	292	4,454	1,390.8
Beaver	9	6	0.0	0.0	11	11	0.0	0.0	8	6	0.0	0.0	6	6	0.0	0.0	1	1	0.0	0.0	35	30	0	0.0
Birch Creek	6	3	0.0	0.0	7	5	0.2	0.1	0	0	-	-	0	0	-	-	0	0	-	-	13	8	1	0.5
Chalkyitsik	15	9	0.0	0.0	11	11	0.0	0.0	2	2	0.0	0.0	3	3	0.0	0.0	1	1	7.0	0.0	32	26	7	0.0
Fort Yukon	73	11	4.5	4.1	96	8	0.0	0.0	24	6	0.0	0.0	20	19	0.2	0.0	9	6	4.8	2.3	222	50	380	306.1
Rampart	3	3	0.0	0.0	9	7	0.0	0.0	3	3	5.0	0.0	5	5	0.0	0.0	5	4	8.7	3.9	25	22	58	19.4
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	0.0	0.0	7	6	0.0	0.0	4	4	0.0	0.0	30	26	0	0.0
Tanana	20	3	0.0	0.0	66	18	0.0	0.0	7	4	0.0	0.0	7	7	6.4	0.0	22	18	200.1	30.3	122	50	4,448	666.8
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	0.5	0.3	7	6	1.3	0.5	2	2	0.0	0.0	63	19	12	4.1
District 5 Total	156	39	2.1	1.9	231	74	0.0	0.0	56	30	0.3	0.0	55	52	1.0	0.0	44	36	102.2	15.1	542	231	4,909	734.2
Yukon Total	392	98	1.8	1.3	777	196	1.6	1.3	535	210	4.0	1.6	291	273	13.1	0.4	103	93	62.9	7.1	2,098	870	14,482	1,641.3

Table 10. The number of salmon estimated to have been harvested in Yukon River salmon subsistence fisheries.

Fishery	Chinook	Summer-Run Chum	Fall-Run Chum	Coho
District 1	5,925	27,790	3,935	1,808
District 2	7,617	20,703	5,628	3,297
District 3	2,998	1,865	615	1,340
Lower Yukon Total	16,540	50,358	10,178	6,445
District 4	11,289	38,949	20,875	4,451
District 5	16,118	24,132	73,902	4,919
District 6	2,826	5,101	40,569	21,573
Upper Yukon Total	30,233	68,182	135,346	30,943
Alaska Total	46,773	118,540	145,524	37,388
Canadian Yukon	9,401	0	4,014	0
Yukon River Total	56,174	118,540	149,538	37,388

Table 11. The number of salmon estimated to have been harvested in Yukon River salmon subsistence fisheries in the Lower Yukon Area.

Village	Chinook	Summer-Run Chum	Fall-Run Chum	Coho
Alakanuk	1,044	8,058	193	391
Emmonak ^a	1,311	8,401	2,027	801
Kotlik ^b	3,125	9,105	1,631	581
Sheldon's Point	445	2,226	84	35
District 1 Total	5,925	27,790	3,935	1,808
Marshall	1,277	2,042	891	259
Mountain Village	1,171	4,743	1,473	868
Pilot Station ^c	2,681	4,634	1,062	553
Pitkas Point	652	1,452	610	347
St. Mary's	1,836	7,832	1,592	1,270
District 2 Total	7,617	20,703	5,628	3,297
Holy Cross	1,649	1,028	190	944
Russian Mission	1,349	837	425	396
District 3 Total	2,998	1,865	615	1,340
Lower Yukon Total	16,540	50,358	10,178	6,445

^aIncludes an estimated 661 chinook, 2,519 summer chum, 1,620 fall chum, and 761 coho harvested in the ADF&G District 1 Big Eddy and Emmonak test fisheries.

^bIncludes an estimated 869 chinook, 3,103 summer chum, 854 fall chum, and 334 coho harvested in the ADF&G District 1 Middle Mouth test fishery.

^cIncludes an estimated 262 chinook, 984 summer chum, 505 fall chum, and 234 coho harvested in the ADF&G Pilot Station Sonar test fishery.

Table 12. The number of salmon estimated to have been harvested in Yukon River salmon subsistence fisheries in the Upper Yukon Area.

Village	Estimation Method	Chinook	Summer-Run Chum	Fall-Run Chum	Coho
Alatna	Survey	5	962	38	83
Allakaket	Survey	446	6,451	475	25
Anvik	Survey	619	876	452	347
Bettles	Survey	16	155	0	0
Galena	Survey	2,574	3,493	5,525	422
Grayling	Survey	874	8,094	3,616	1,363
Hughes	Survey	146	1,257	270	9
Huslia	Survey	198	7,857	411	150
Kaltag	Survey	1,866	2,287	2,834	1,260
Koyukuk	Survey	885	2,326	2,761	307
Nulato	Survey	2,500	159	1,637	75
Ruby	Survey	971	1,352	2,856	410
Shageluk	Survey	189	3,680	0	0
District 4 Total		11,289	38,949	20,875	4,451
Beaver	Survey	713	2,355	7	0
Birch Creek	Survey	196	0	0	1
Central	Permit	151	0	73	0
Chalkyitsik	Survey	0	500	100	7
Chicken	Permit	0	0	0	0
Circle	Permit	1,720	51	6,340	5
Fairbanks NSB	Permit	982	1,068	2,022	8
Eagle	Permit	1,193	607	7,985	0
Fort Yukon	Survey	5,585	11,974	7,467	380
Rampart	Survey	988	20	5,801	58
Stevens Village	Survey	2,035	1,385	2,481	0
Tanana	Survey	2,483	2,779	40,868	4,448
Venetie	Survey	9	3,393	758	12
Other	Permit	63	0	0	0
District 5 Total		16,118	24,132	73,902	4,919
Delta Junction ^a	Permit	0	0	46	3
Fairbanks NSB	Permit	378	1,096	1,671	2,501
Healy	Permit	0	0	2,059	1,987
Manley	Permit	518	1,729	13,243	6,361
Minto	Permit	134	748	5,276	526
Nenana ^b	Permit	1,654	1,499	17,932	10,171
Tok	Permit	139	19	101	12
Other	Permit	3	10	241	12
District 6 Total		2,826	5,101	40,569	21,573
Upper Yukon Total		30,233	68,182	135,346	30,943

^a Does not include a reported harvest of 741 post-spawned fall-run chum salmon.

^b Includes 112 chinook, 98 summer chum, and 777 fall chum harvested in the ADF&G Nenana experimental fishery.

Table 13.

The estimated number of dogs owned by subsistence fishing households located in nonpermit communities, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	1.0	0.6	35	5	0.0	0.0	54	16	1.3	0.1	12	11	1.7	0.1	1	0	-	-	121	36	113	15.3
Emmonak	28	5	0.2	0.1	54	12	0.2	0.1	40	18	0.7	0.1	13	13	0.7	0.0	3	3	1.0	0.0	138	51	60	10.7
Kotlik	22	3	1.0	0.5	23	3	0.0	0.0	35	10	1.7	0.8	15	13	2.6	0.3	5	5	4.2	0.0	100	34	141	31.1
Sheldon's Point	1	1	0.0	0.0	2	2	0.5	0.0	9	7	0.8	0.1	9	7	3.0	0.5	0	0	-	-	21	17	35	5.1
District 1 Total	70	13	0.6	0.2	114	22	0.1	0.0	138	51	1.2	0.2	49	44	1.9	0.1	9	8	2.6	0.0	380	138	352	37.2
Marshall	2	2	4.5	0.0	13	4	0.0	0.0	32	10	1.6	0.3	10	9	8.4	0.9	2	2	2.5	0.0	59	27	149	13.3
Mountain Village	8	2	1.0	0.8	46	4	0.0	0.0	51	12	0.5	0.1	23	23	1.4	0.0	2	2	9.0	0.0	130	43	89	10.7
Pilot Station	8	2	0.0	0.0	42	11	0.9	0.3	45	20	1.3	0.3	3	3	3.0	0.0	2	2	1.0	0.0	100	38	107	20.4
Pitkas Point	1	1	0.0	0.0	7	5	2.4	1.2	5	4	0.5	0.1	8	8	8.7	0.0	0	0	-	-	21	18	89	8.7
St. Mary's	2	2	0.0	0.0	20	4	0.2	0.2	25	8	1.1	0.3	21	18	3.1	0.4	5	5	2.0	0.0	73	37	109	13.8
District 2 Total	21	9	0.8	0.3	128	28	0.4	0.1	158	54	1.0	0.1	65	61	4.0	0.2	11	11	3.1	0.0	383	163	546	31.6
Holy Cross	1	0	-	-	15	5	0.2	0.1	22	10	1.1	0.2	6	6	2.6	0.0	2	1	3.0	0.0	46	22	49	5.6
Russian Mission	1	1	7.0	0.0	18	5	0.0	0.0	20	6	1.1	0.5	11	11	2.2	0.0	1	1	0.0	0.0	51	24	55	9.7
District 3 Total	2	1	3.5	0.0	33	10	0.0	0.0	42	16	1.1	0.2	17	17	2.4	0.0	3	2	2.0	0.0	97	46	104	11.2
Alatna	4	3	0.3	0.1	3	3	0.6	0.0	3	2	1.5	0.8	3	3	3.3	0.0	0	0	-	-	13	11	17	2.6
Allakaket	4	3	1.0	0.2	17	5	0.2	0.1	11	4	3.2	0.8	9	8	3.6	0.6	2	2	22.5	0.0	43	22	120	10.7
Anvik	2	2	1.0	0.0	14	4	7.0	5.3	5	3	1.0	0.3	7	7	6.5	0.0	3	3	9.6	0.0	31	19	180	75.0
Bettles	3	2	21.5	12.4	19	11	2.6	1.0	2	0	-	-	0	0	-	-	0	0	-	-	24	13	114	41.8
Galena	43	7	0.7	0.4	72	5	0.4	0.2	45	14	2.8	1.3	14	13	5.2	0.4	5	5	2.2	0.0	179	44	272	66.3
Grayling	4	3	0.3	0.1	19	4	1.0	0.3	8	5	6.4	2.3	14	13	6.7	0.3	7	7	4.8	0.0	52	32	200	20.4
Hughes	2	2	0.0	0.0	4	4	0.7	0.0	6	5	0.6	0.1	6	5	2.6	0.3	0	0	-	-	18	16	22	2.0
Huslia	12	2	0.0	0.0	27	4	4.7	4.0	8	4	1.0	0.4	8	7	3.5	0.5	6	6	15.1	0.0	61	23	255	110.2
Kaltag	13	3	0.3	0.2	12	4	0.7	0.3	13	5	5.8	2.0	14	14	3.5	0.0	2	2	16.5	0.0	54	28	170	27.0
Koyukuk	16	4	1.5	1.2	16	5	1.2	0.6	6	5	1.2	0.1	3	3	1.6	0.0	1	1	1.0	0.0	42	18	56	23.0
Nulato	26	1	0.0	0.0	34	5	0.6	0.2	15	5	0.8	0.3	12	12	3.4	0.0	3	3	12.6	0.0	90	26	111	8.7
Ruby	13	4	0.2	0.2	26	4	0.0	0.0	12	3	2.6	1.8	11	10	4.0	0.6	4	4	16.0	0.0	66	25	143	24.0
Shageluk	1	0	-	-	8	4	0.0	0.0	7	4	1.7	0.4	4	4	6.0	0.0	3	3	1.6	0.0	23	15	41	3.1
District 4 Total	143	36	0.9	0.3	271	62	1.4	0.5	141	59	2.6	0.5	105	99	4.4	0.1	36	36	9.7	0.0	696	292	1,706	162.8
Beaver	9	6	1.0	0.3	11	11	0.6	0.0	8	6	3.0	1.4	6	6	1.5	0.0	1	1	1.0	0.0	35	30	50	11.7
Birch Creek	6	3	0.6	0.2	7	5	1.8	0.3	0	0	-	-	0	0	-	-	0	0	-	-	13	8	16	3.1
Chalkyitsik	15	9	0.6	0.1	11	11	1.6	0.0	2	2	0.5	0.0	3	3	3.0	0.0	1	1	27.0	0.0	32	26	65	2.6
Fort Yukon	73	11	2.2	1.6	96	8	0.7	0.3	24	6	3.3	2.0	20	19	3.9	0.2	9	6	8.5	2.7	222	50	473	135.2
Rampart	3	3	4.3	0.0	9	7	3.2	1.0	3	3	0.3	0.0	5	5	1.4	0.0	5	4	11.2	4.3	25	22	106	23.0
Stevens Village	3	2	0.0	0.0	11	9	1.4	0.4	5	5	0.6	0.0	7	6	3.3	0.6	4	4	5.7	0.0	30	26	65	6.6
Tanana	20	3	5.6	3.4	66	18	0.6	0.2	7	4	1.2	0.4	7	7	2.8	0.0	22	18	16.5	1.4	122	50	550	76.5
Venetie	27	2	1.0	0.0	20	5	1.6	0.4	7	4	3.7	1.8	7	6	12.8	1.4	2	2	10.0	0.0	63	19	195	18.4
District 5 Total	156	39	2.1	0.8	231	74	1.0	0.1	56	30	2.5	0.9	55	52	4.3	0.2	44	36	12.9	1.0	542	231	1,522	159.2
Yukon Totals	392	98	1.3	0.3	777	196	0.8	0.1	535	210	1.6	0.1	291	273	3.7	0.0	103	93	9.5	0.4	2,098	870	4,232	233.2

Table 14.

The estimated number of summer-run chum salmon fed to dogs by subsistence fishing households located in nonpermit communities, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	0.0	0.0	35	5	0.0	0.0	54	16	0.0	0.0	12	11	0.0	0.0	1	0	-	-	121	36	0	0.0
Emmonak	28	5	0.0	0.0	54	12	0.0	0.0	40	18	0.0	0.0	13	13	0.0	0.0	3	3	0.0	0.0	138	51	0	0.0
Kotlik	22	3	0.0	0.0	23	3	0.0	0.0	35	10	0.0	0.0	15	13	0.0	0.0	5	5	6.0	0.0	100	34	30	0.0
Sheldon's Point	1	1	0.0	0.0	2	2	0.0	0.0	9	7	0.0	0.0	9	7	0.0	0.0	0	0	-	-	21	17	0	0.0
District 1 Total	70	13	0.0	0.0	114	22	0.0	0.0	138	51	0.0	0.0	49	44	0.0	0.0	9	8	3.3	0.0	380	138	30	0.0
Marshall	2	2	0.0	0.0	13	4	0.0	0.0	32	10	0.0	0.0	10	9	3.8	1.2	2	2	0.0	0.0	59	27	38	12.2
Mountain Village	8	2	0.0	0.0	46	4	0.0	0.0	51	12	0.0	0.0	23	23	0.0	0.0	2	2	0.0	0.0	130	43	0	0.0
Pilot Station	8	2	0.0	0.0	42	11	0.0	0.0	45	20	0.0	0.0	3	3	0.0	0.0	2	2	0.0	0.0	100	38	0	0.0
Pitkas Point	1	1	0.0	0.0	7	5	0.0	0.0	5	4	0.0	0.0	8	8	0.0	0.0	0	0	-	-	21	18	0	0.0
St. Mary's	2	2	0.0	0.0	20	4	0.0	0.0	25	8	0.0	0.0	21	18	23.6	6.1	5	5	38.0	0.0	73	37	685	128.6
District 2 Total	21	9	0.0	0.0	128	28	0.0	0.0	158	54	0.0	0.0	65	61	8.2	1.9	11	11	17.2	0.0	383	163	724	129.1
Holy Cross	1	0	-	-	15	5	0.0	0.0	22	10	0.0	0.0	6	6	50.0	0.0	2	1	0.0	0.0	46	22	300	0.0
Russian Mission	1	1	0.0	0.0	18	5	0.0	0.0	20	6	0.0	0.0	11	11	5.4	0.0	1	1	0.0	0.0	51	24	60	0.0
District 3 Total	2	1	0.0	0.0	33	10	0.0	0.0	42	16	0.0	0.0	17	17	21.1	0.0	3	2	0.0	0.0	97	46	360	0.0
Alatna	4	3	15.0	7.5	3	3	16.6	0.0	3	2	75.0	43.3	3	3	125.0	0.0	0	0	-	-	13	11	710	133.2
Allakaket	4	3	0.0	0.0	17	5	0.0	0.0	11	4	176.2	49.8	9	8	118.7	25.9	2	2	1,315.0	0.0	43	22	5,637	595.9
Anvik	2	2	225.0	0.0	14	4	1,000.0	597.6	5	3	133.3	84.3	7	7	1,489.2	0.0	3	3	2,133.3	0.0	31	19	31,941	8,377.0
Bettles	3	2	50.0	28.8	19	11	2.2	1.4	2	0	-	-	0	0	-	-	0	0	-	-	24	13	193	90.8
Galena	43	7	4.4	4.0	72	5	50.0	48.2	45	14	214.2	128.4	14	13	864.6	160.6	5	5	250.0	0.0	179	44	26,787	7,109.2
Grayling	4	3	66.6	33.3	19	4	25.0	22.2	8	5	700.0	294.3	14	13	1,110.7	79.5	7	7	1,447.1	0.0	52	32	32,022	2,641.8
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	8.0	3.2	6	5	20.4	8.1	0	0	-	-	18	16	170	52.0
Huslia	12	2	0.0	0.0	27	4	75.0	69.2	8	4	0.0	0.0	8	7	185.7	34.8	6	6	650.0	0.0	61	23	7,410	1,889.3
Kaltag	13	3	0.0	0.0	12	4	0.0	0.0	13	5	1,520.0	605.3	14	14	972.8	0.0	2	2	3,350.0	0.0	54	28	40,080	7,868.9
Koyukuk	16	4	120.0	103.9	16	5	10.0	8.2	6	5	80.0	23.8	3	3	266.6	0.0	1	1	2,000.0	0.0	42	18	5,360	1,623.0
Nulato	26	1	0.0	97.8	34	5	47.6	35.8	15	5	0.0	0.0	12	12	708.3	0.0	3	3	1,333.3	0.0	90	26	14,118	2820.4
Ruby	13	4	0.0	0.0	26	4	0.0	0.0	12	3	0.0	0.0	11	10	244.4	59.1	4	4	687.5	0.0	66	25	5,438	650.5
Shageluk	1	0	-	-	8	4	0.0	0.0	7	4	112.5	43.0	4	4	75.0	0.0	3	3	100.0	0.0	23	15	1,387	301.0
District 4 Total	143	36	21.2	21.3	271	62	81.0	34.4	141	59	277.6	71.4	105	99	638.4	24.9	36	36	1,112.7	0.0	696	292	171,258	14,312.8
Beaver	9	6	33.3	19.2	11	11	0.9	0.0	8	6	285.8	141.4	6	6	0.0	0.0	1	1	0.0	0.0	35	30	2,596	1,144.4
Birch Creek	6	3	0.0	0.0	7	5	0.0	0.0	0	0	-	-	0	0	-	-	0	0	-	-	13	8	0	0.0
Chalkyitsik	15	9	0.0	0.0	11	11	4.5	0.0	2	2	0.0	0.0	3	3	25.0	0.0	1	1	300.0	0.0	32	26	425	0.0
Fort Yukon	73	11	68.1	62.8	96	8	29.3	14.9	24	6	100.0	54.7	20	19	181.5	15.7	9	6	366.6	138.7	222	50	17,128	5147.4
Rampart	3	3	166.6	0.0	9	7	82.1	33.2	3	3	0.0	0.0	5	5	10.0	0.0	5	4	5.0	2.2	25	22	1,314	299.0
Stevens Village	3	2	0.0	0.0	11	9	22.2	6.2	5	5	30.0	0.0	7	6	179.1	62.2	4	4	0.0	0.0	30	26	1,648	440.8
Tanana	20	3	0.0	0.0	66	18	0.0	0.0	7	4	0.0	0.0	7	7	0.0	0.0	22	18	76.1	15.2	122	50	1,674	335.2
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	62.5	40.9	7	6	313.6	64.4	2	2	550.0	0.0	63	19	3,733	534.2
District 5 Total	156	39	37.0	29.4	231	74	16.7	6.3	56	30	94.1	31.3	55	52	131.0	12.7	44	36	145.4	29.3	542	231	28,521	5,337.2
Yukon Total	392	98	22.4	14.0	777	196	33.2	12.1	535	210	83.0	19.1	291	273	258.2	9.3	103	93	453.1	12.5	2,098	870	200,893	15,276.0

Table 15.

The estimated number of fall-run chum salmon fed to dogs by subsistence fishing households located in nonpermit communities, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	0.0	0.0	35	5	0.0	0.0	54	16	0.0	0.0	12	11	0.0	0.0	1	0	-	-	121	36	0	0.0
Emmonak	28	5	0.0	0.0	54	12	0.0	0.0	40	18	0.0	0.0	13	13	0.0	0.0	3	3	0.0	0.0	138	51	0	0.0
Kotlik	22	3	0.0	0.0	23	3	0.0	0.0	35	10	0.0	0.0	15	13	0.0	0.0	5	5	0.0	0.0	100	34	0	0.0
Sheldon's Point	1	1	0.0	0.0	2	2	0.0	0.0	9	7	0.0	0.0	9	7	0.0	0.0	0	0	-	-	21	17	0	0.0
District 1 Total	70	13	0.0	0.0	114	22	0.0	0.0	138	51	0.0	0.0	49	44	0.0	0.0	9	8	0.0	0.0	380	138	0	0.0
Marshall	2	2	0.0	0.0	13	4	0.0	0.0	32	10	0.0	0.0	10	9	0.0	0.0	2	2	0.0	0.0	59	27	0	0.0
Mountain Village	8	2	0.0	0.0	46	4	0.0	0.0	51	12	0.0	0.0	23	23	0.0	0.0	2	2	0.0	0.0	130	43	0	0.0
Pilot Station	8	2	0.0	0.0	42	11	0.0	0.0	45	20	0.0	0.0	3	3	0.0	0.0	2	2	0.0	0.0	100	38	0	0.0
Pitkas Point	1	1	0.0	0.0	7	5	36.0	19.2	5	4	0.0	0.0	8	8	25.0	0.0	0	0	-	-	21	18	452	134.7
St. Mary's	2	2	0.0	0.0	20	4	0.0	0.0	25	8	0.0	0.0	21	18	0.0	0.0	5	5	40.0	0.0	73	37	200	0.0
District 2 Total	21	9	0.0	0.0	128	28	1.9	1.0	158	54	0.0	0.0	65	61	3.0	0.0	11	11	18.1	0.0	383	163	652	134.7
Holy Cross	1	0	-	-	15	5	0.0	0.0	22	10	0.0	0.0	6	6	0.0	0.0	2	1	0.0	0.0	46	22	0	0.0
Russian Mission	1	1	90.0	0.0	18	5	0.0	0.0	20	6	0.0	0.0	11	11	5.4	0.0	1	1	0.0	0.0	51	24	150	0.0
District 3 Total	2	1	45.0	0.0	33	10	0.0	0.0	42	16	0.0	0.0	17	17	3.5	0.0	3	2	0.0	0.0	97	46	150	0.0
Alatna	4	3	0.0	0.0	3	3	0.0	0.0	3	2	0.0	0.0	3	3	0.0	0.0	0	0	-	-	13	11	0	0.0
Allakaket	4	3	0.0	0.0	17	5	0.0	0.0	11	4	0.0	0.0	9	8	0.0	0.0	2	2	0.0	0.0	43	22	0	0.0
Anvik	2	2	0.0	0.0	14	4	0.0	0.0	5	3	0.0	0.0	7	7	40.0	0.0	3	3	0.0	0.0	31	19	280	0.0
Bettles	3	2	0.0	0.0	19	11	0.0	0.0	2	0	-	-	0	0	-	-	0	0	-	-	24	13	0	0.0
Galena	43	7	0.0	0.0	72	5	0.0	0.0	45	14	0.0	0.0	14	13	23.0	6.1	5	5	0.0	0.0	179	44	323	86.2
Grayling	4	3	0.0	0.0	19	4	0.0	0.0	8	5	0.0	0.0	14	13	0.0	0.0	7	7	0.0	0.0	52	32	0	0.0
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	0.0	0.0	6	5	0.0	0.0	0	0	-	-	18	16	0	0.0
Huslia	12	2	0.0	0.0	27	4	0.0	0.0	8	4	0.0	0.0	8	7	0.0	0.0	6	6	0.0	0.0	61	23	0	0.0
Kaltag	13	3	0.0	0.0	12	4	0.0	0.0	13	5	0.0	0.0	14	14	0.0	0.0	2	2	0.0	0.0	54	28	0	0.0
Koyukuk	16	4	0.0	0.0	16	5	0.0	0.0	6	5	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	42	18	0	0.0
Nulato	26	1	0.0	0.0	34	5	0.0	0.0	15	5	0.0	0.0	12	12	0.0	0.0	3	3	0.0	0.0	90	26	0	0.0
Ruby	13	4	0.0	0.0	26	4	0.0	0.0	12	3	0.0	0.0	11	10	0.0	0.0	4	4	75.0	0.0	66	25	300	0.0
Shageluk	1	0	-	-	8	4	0.0	0.0	7	4	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	23	15	0	0.0
District 4 Total	143	36	0.0	0.0	271	62	0.0	0.0	141	59	0.0	0.0	105	99	5.7	0.8	36	36	8.3	0.0	696	292	903	86.2
Beaver	9	6	0.0	0.0	11	11	0.0	0.0	8	6	0.0	0.0	6	6	0.0	0.0	1	1	0.0	0.0	35	30	0	0.0
Birch Creek	6	3	0.0	0.0	7	5	0.0	0.0	0	0	-	-	0	0	-	-	0	0	-	-	13	8	0	0.0
Chalkyitsik	15	9	0.0	0.0	11	11	0.0	0.0	2	2	0.0	0.0	3	3	0.0	0.0	1	1	90.0	0.0	32	26	90	0.0
Fort Yukon	73	11	68.1	62.8	96	8	0.0	0.0	24	6	0.0	0.0	20	19	12.8	1.6	9	6	0.0	0.0	222	50	5,235	4,586.7
Rampart	3	3	0.0	0.0	9	7	57.1	26.9	3	3	0.0	0.0	5	5	30.0	0.0	5	4	1,000.0	403.7	25	22	5,664	2,033.2
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	0.0	0.0	7	6	0.0	0.0	4	4	150.0	0.0	30	26	600	0.0
Tanana	20	3	133.3	122.9	66	18	16.1	11.4	7	4	0.0	0.0	7	7	145.0	0.0	22	18	1,720.7	138.1	122	50	42,602	3,981.1
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	0.0	0.0	7	6	66.6	25.1	2	2	0.0	0.0	63	19	466	176.0
District 5 Total	156	39	48.9	33.3	231	74	6.8	3.4	56	30	0.0	0.0	55	52	34.3	3.2	44	36	989.7	82.9	542	231	54,658	6,407.1
Yukon Total	392	98	19.7	13.2	777	196	2.3	1.0	535	210	0.0	0.0	291	273	9.4	0.6	103	93	427.6	35.4	2,098	870	56,363	6,409.2

Table 16.

The estimated number of coho salmon fed to dogs by subsistence fishing households located in nonpermit communities, by stratum with community, use category, district, and Yukon River totals; *N* indicates the total number of households and *n* indicates the number of households contacted.

Community	Unknown Use				Zero Use				Light Use				Medium Use				Heavy Use				Community Total			
	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Mean	SE	<i>N</i>	<i>n</i>	Total	SE
Alakanuk	19	4	0.0	0.0	35	5	0.0	0.0	54	16	0.3	0.2	12	11	0.0	0.0	1	0	-	-	121	36	16	13.8
Emmonak	28	5	0.0	0.0	54	12	0.0	0.0	40	18	0.0	0.0	13	13	0.0	0.0	3	3	0.0	0.0	138	51	0	0.0
Kotlik	22	3	0.0	0.0	23	3	0.0	0.0	35	10	0.0	0.0	15	13	0.0	0.0	5	5	0.0	0.0	100	34	0	0.0
Sheldon's Point	1	1	0.0	0.0	2	2	0.0	0.0	9	7	0.0	0.0	9	7	0.0	0.0	0	0	-	-	21	17	0	0.0
District 1 Total	70	13	0.0	0.0	114	22	0.0	0.0	138	51	0.1	0.1	49	44	0.0	0.0	9	8	0.0	0.0	380	138	16	13.8
Marshall	2	2	0.0	0.0	13	4	0.0	0.0	32	10	0.0	0.0	10	9	38.8	12.2	2	2	0.0	0.0	59	27	388	123.0
Mountain Village	8	2	0.0	0.0	46	4	0.0	0.0	51	12	0.0	0.0	23	23	0.0	0.0	2	2	0.0	0.0	130	43	0	0.0
Pilot Station	8	2	0.0	0.0	42	11	0.0	0.0	45	20	0.0	0.0	3	3	0.0	0.0	2	2	0.0	0.0	100	38	0	0.0
Pitkas Point	1	1	0.0	0.0	7	5	0.0	0.0	5	4	0.0	0.0	8	8	12.5	0.0	0	0	-	-	21	18	100	0.0
St. Mary's	2	2	0.0	0.0	20	4	0.0	0.0	25	8	0.0	0.0	21	18	13.8	5.2	5	5	19.0	0.0	73	37	386	110.2
District 2 Total	21	9	0.0	0.0	128	28	0.0	0.0	158	54	0.0	0.0	65	61	12.0	2.5	11	11	8.6	0.0	383	163	875	164.8
Holy Cross	1	0	-	-	15	5	0.0	0.0	22	10	0.0	0.0	6	6	0.0	0.0	2	1	0.0	0.0	46	22	0	0.0
Russian Mission	1	1	0.0	0.0	18	5	0.0	0.0	20	6	0.0	0.0	11	11	0.0	0.0	1	1	0.0	0.0	51	24	0	0.0
District 3 Total	2	1	0.0	0.0	33	10	0.0	0.0	42	16	0.0	0.0	17	17	0.0	0.0	3	2	0.0	0.0	97	46	0	0.0
Alatna	4	3	0.0	0.0	3	3	0.0	0.0	3	2	0.0	0.0	3	3	0.0	0.0	0	0	-	-	13	11	0	0.0
Allakaket	4	3	0.0	0.0	17	5	0.0	0.0	11	4	0.0	0.0	9	8	0.0	0.0	2	2	0.0	0.0	43	22	0	0.0
Anvik	2	2	0.0	0.0	14	4	0.0	0.0	5	3	0.0	0.0	7	7	0.0	0.0	3	3	0.0	0.0	31	19	0	0.0
Bettles	3	2	0.0	0.0	19	11	0.0	0.0	2	0	-	-	0	0	-	-	0	0	-	-	24	13	0	0.0
Galena	43	7	0.0	0.0	72	5	0.0	0.0	45	14	0.0	0.0	14	13	17.0	2.9	5	5	0.0	0.0	179	44	239	40.8
Grayling	4	3	0.0	0.0	19	4	0.0	0.0	8	5	0.0	0.0	14	13	0.0	0.0	7	7	0.0	0.0	52	32	0	0.0
Hughes	2	2	0.0	0.0	4	4	0.0	0.0	6	5	0.0	0.0	6	5	0.2	0.0	0	0	-	-	18	16	1	0.0
Huslia	12	2	0.0	0.0	27	4	0.0	0.0	8	4	0.0	0.0	8	7	0.0	0.0	6	6	8.3	0.0	61	23	50	0.0
Kaltag	13	3	0.0	0.0	12	4	0.0	0.0	13	5	0.0	0.0	14	14	0.0	0.0	2	2	0.0	0.0	54	28	0	0.0
Koyukuk	16	4	13.7	11.9	16	5	0.4	0.3	6	5	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	42	18	226	190.3
Nulato	26	1	0.0	8.9	34	5	0.0	0.0	15	5	0.0	0.0	12	12	0.0	0.0	3	3	0.0	0.0	90	26	0	233.7
Ruby	13	4	0.0	0.0	26	4	0.0	0.0	12	3	0.0	0.0	11	10	0.0	0.0	4	4	18.7	0.0	66	25	75	0.0
Shageluk	1	0	-	-	8	4	0.0	0.0	7	4	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	23	15	0	0.0
District 4 Total	143	36	1.5	2.1	271	62	0.0	0.0	141	59	0.0	0.0	105	99	2.2	0.3	36	36	3.4	0.0	696	292	591	304.1
Beaver	9	6	0.0	0.0	11	11	0.0	0.0	8	6	0.0	0.0	6	6	0.0	0.0	1	1	0.0	0.0	35	30	0	0.0
Birch Creek	6	3	0.0	0.0	7	5	0.2	0.1	0	0	-	-	0	0	-	-	0	0	-	-	13	8	1	0.5
Chalkyitsik	15	9	0.0	0.0	11	11	0.0	0.0	2	2	0.0	0.0	3	3	0.0	0.0	1	1	0.0	0.0	32	26	0	0.0
Fort Yukon	73	11	0.0	0.0	96	8	0.0	0.0	24	6	0.0	0.0	20	19	0.0	0.0	9	6	0.0	0.0	222	50	0	0.0
Rampart	3	3	0.0	0.0	9	7	0.0	0.0	3	3	0.0	0.0	5	5	0.0	0.0	5	4	0.0	0.0	25	22	0	0.0
Stevens Village	3	2	0.0	0.0	11	9	0.0	0.0	5	5	0.0	0.0	7	6	0.0	0.0	4	4	0.0	0.0	30	26	0	0.0
Tanana	20	3	0.0	0.0	66	18	0.0	0.0	7	4	0.0	0.0	7	7	0.0	0.0	22	18	125.1	24.5	122	50	2,753	539.8
Venetie	27	2	0.0	0.0	20	5	0.0	0.0	7	4	0.0	0.0	7	6	0.0	0.0	2	2	0.0	0.0	63	19	0	0.0
District 5 Total	156	39	0.0	0.0	231	74	0.0	0.0	56	30	0.0	0.0	55	52	0.0	0.0	44	36	62.5	12.2	542	231	2,755	539.8
Yukon Total	392	98	0.5	0.7	777	196	0.0	0.0	535	210	0.0	0.0	291	273	3.5	0.5	103	93	28.8	5.2	2,098	870	4,239	641.3

Table 17. Comparisons between assigned use categories and 1991 harvest levels.

District	Assigned Use Cat.		1991 Harvest Level			
			Zero	Light	Medium	Heavy
1	Zero	%	94.9	5.1	0.0	0.0
		<i>n</i>	112	6	0	0
	Light	%	15.4	77.9	6.7	0.0
		<i>n</i>	23	116	10	0
	Medium	%	7.8	26.0	62.3	3.9
		<i>n</i>	6	20	48	3
	Heavy	%	7.7	0.0	30.8	61.5
		<i>n</i>	1	0	4	8
2	Zero	%	95.3	3.9	0.8	0.0
		<i>n</i>	122	5	1	0
	Light	%	13.3	81.0	5.1	0.6
		<i>n</i>	21	128	8	1
	Medium	%	13.9	24.6	50.8	10.8
		<i>n</i>	9	16	33	7
	Heavy	%	27.3	9.1	37.3	36.4
		<i>n</i>	3	1	3	4
3	Zero	%	100.0	0.0	0.0	0.0
		<i>n</i>	33	0	0	0
	Light	%	16.7	83.3	0.0	0.0
		<i>n</i>	7	35	0	0
	Medium	%	17.7	41.2	41.2	0.0
		<i>n</i>	3	7	7	0
	Heavy	%	33.3	0.0	0.0	66.7
		<i>n</i>	1	0	0	2
4	Zero	%	96.3	2.2	1.5	0.0
		<i>n</i>	261	6	4	0
	Light	%	17.7	70.2	10.6	1.4
		<i>n</i>	25	99	15	2
	Medium	%	17.1	28.6	49.5	4.8
		<i>n</i>	18	30	52	5
	Heavy	%	16.7	19.4	22.2	41.7
		<i>n</i>	6	7	8	15
5	Zero	%	97.9	2.2	0.0	0.0
		<i>n</i>	228	5	0	0
	Light	%	32.1	58.9	7.1	1.8
		<i>n</i>	18	33	4	1
	Medium	%	30.9	10.9	49.1	9.1
		<i>n</i>	17	6	27	5
	Heavy	%	18.2	4.6	18.2	59.1
		<i>n</i>	8	2	8	26

Table 18. Correlations (r) between 1988 to 1991 total annual subsistence salmon harvests separated by 1, 2, and 3 years.

District	Temporal Separation In Harvests					
	1 Year		2 Year		3 Year	
	n	r	n	r	n	r
1	266	0.493	171	0.482	105	0.417
2	326	0.424	208	0.463	138	0.390
3	103	0.553	66	0.490	39	0.539
4	595	0.404	361	0.263	214	0.283
5	153	0.517	96	0.407	54	0.327
1-3	695	0.461	445	0.472	282	0.416
4-5	748	0.417	457	0.293	268	0.278
1-5	1,443	0.426	902	0.319	550	0.299

Table 19. The estimated number of salmon harvested in Yukon River salmon subsistence fisheries since 1961.

Year	United States ^a					Canada			Drainage
	Chinook	S. Chum	F. Chum	Coho ^b	Total	Chinook	F. Chum	Total	Total
1961	21,488	305,317	101,772	9,192	437,769	9,800	5,800	15,600	453,369
1962	11,110	261,856	87,285	9,480	369,731	9,900	8,500	18,400	388,131
1963	24,862	297,094	99,031	27,699	448,686	7,794	25,500	33,294	481,980
1964	16,231	361,080	120,360	12,187	509,858	4,200	10,258	14,458	524,316
1965	16,608	336,848	112,283	11,789	477,528	3,115	9,718	12,833	490,361
1966	11,572	154,508	51,503	13,192	230,775	2,510	10,035	12,545	243,320
1967	16,448	206,233	68,744	17,164	308,589	2,963	13,618	16,581	325,170
1968	12,106	133,880	44,627	11,613	202,226	2,830	11,180	14,010	216,236
1969	14,000	156,191	52,063	7,776	230,030	984	5,497	6,481	236,511
1970	13,874	166,504	55,501	3,966	239,845	2,052	1,232	3,284	243,129
1971	25,684	171,487	57,162	16,912	271,245	3,269	15,150	18,419	289,664
1972	20,258	108,006	36,002	7,532	171,798	3,960	5,000	8,960	180,758
1973	24,317	161,012	53,670	10,236	249,235	2,323	7,329	9,652	258,887
1974	19,964	227,811	93,776	11,646	353,197	3,823	9,102	12,925	366,122
1975	13,045	211,888	86,591	20,708	332,232	3,000	18,100	21,100	353,332
1976	17,806	186,872	72,327	5,241	282,246	1,525	4,200	5,725	287,971
1977	17,581	159,502	82,771	16,333	276,187	2,807	8,489	11,296	287,483
1978	30,297	197,144	94,867	7,787	330,095	2,906	6,210	9,116	339,211
1979	31,005	196,187	233,347	9,794	470,333	4,200	13,000	17,200	487,533
1980	42,724	272,398	172,657	20,158	507,937	13,046	13,218	26,264	534,201
1981	29,690	208,284	188,525	21,228	447,727	9,216	7,021	16,237	463,964
1982	28,158	260,969	132,897	35,894	457,918	8,268	4,779	13,047	470,965
1983	49,478	240,386	192,928	23,895	506,687	5,625	3,500	9,125	515,812
1984	42,428	230,747	174,823	49,020	497,018	6,610	6,335	12,945	509,963
1985	39,771	264,828	206,472	32,264	543,335	6,428	5,519	11,947	555,282
1986	45,238	290,825	164,043	34,468	534,574	9,267	3,029	12,296	546,870
1987 ^c	53,124	275,909	361,663	84,894	775,590	6,500	3,889	10,389	785,979
1988 ^d	46,590	202,914	159,703	69,138	478,345	7,560	3,302	10,862	489,207
1989 ^d	51,280	163,978	216,693	41,510	483,461	7,855	5,471	13,326	496,787
1990 ^d	52,113	118,471	182,033	47,816	400,433	7,603	6,085	13,688	414,121
1991 ^d	46,773	118,540	145,524	37,388	348,225	9,401	4,014	13,415	361,640

^a Includes personal use catches beginning in 1987 and ending in June 1990. Species composition of chum and coho salmon are estimated for 1961-1976 since harvests of these species were not differentiated prior to 1977.

^b Estimates considered minimum prior to 1979 because surveys were typically conducted before the end of the fishing season.

^c Includes estimates of harvests from illegal fall fish and roe sales in fishing districts 5 and 6.

^d Summer-run chum estimates do not include subsistence utilization of fish harvested to produce commercial roe sales.

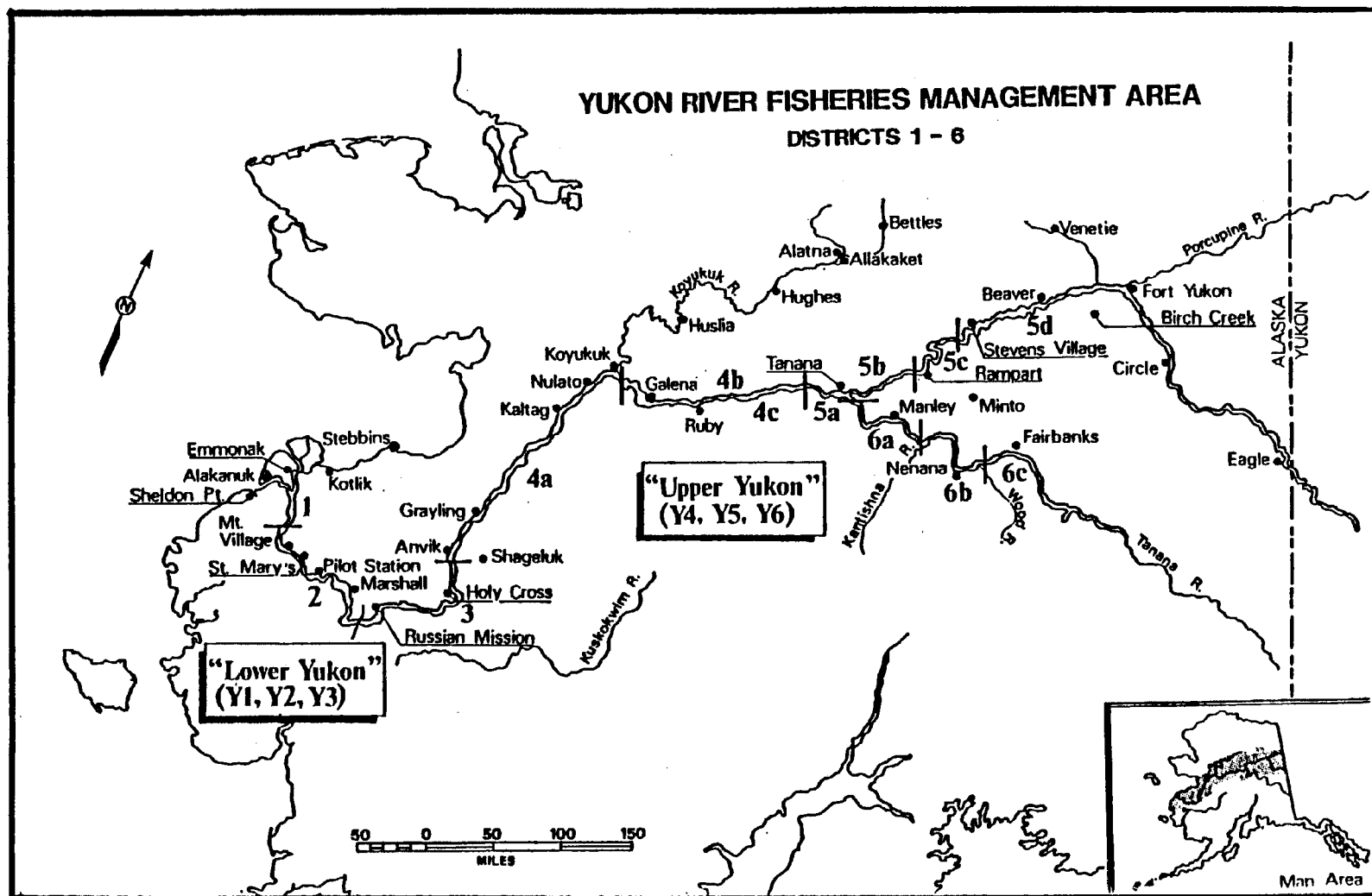


Figure 1. The Alaskan portion of the Yukon River drainage, showing communities and fishing districts.

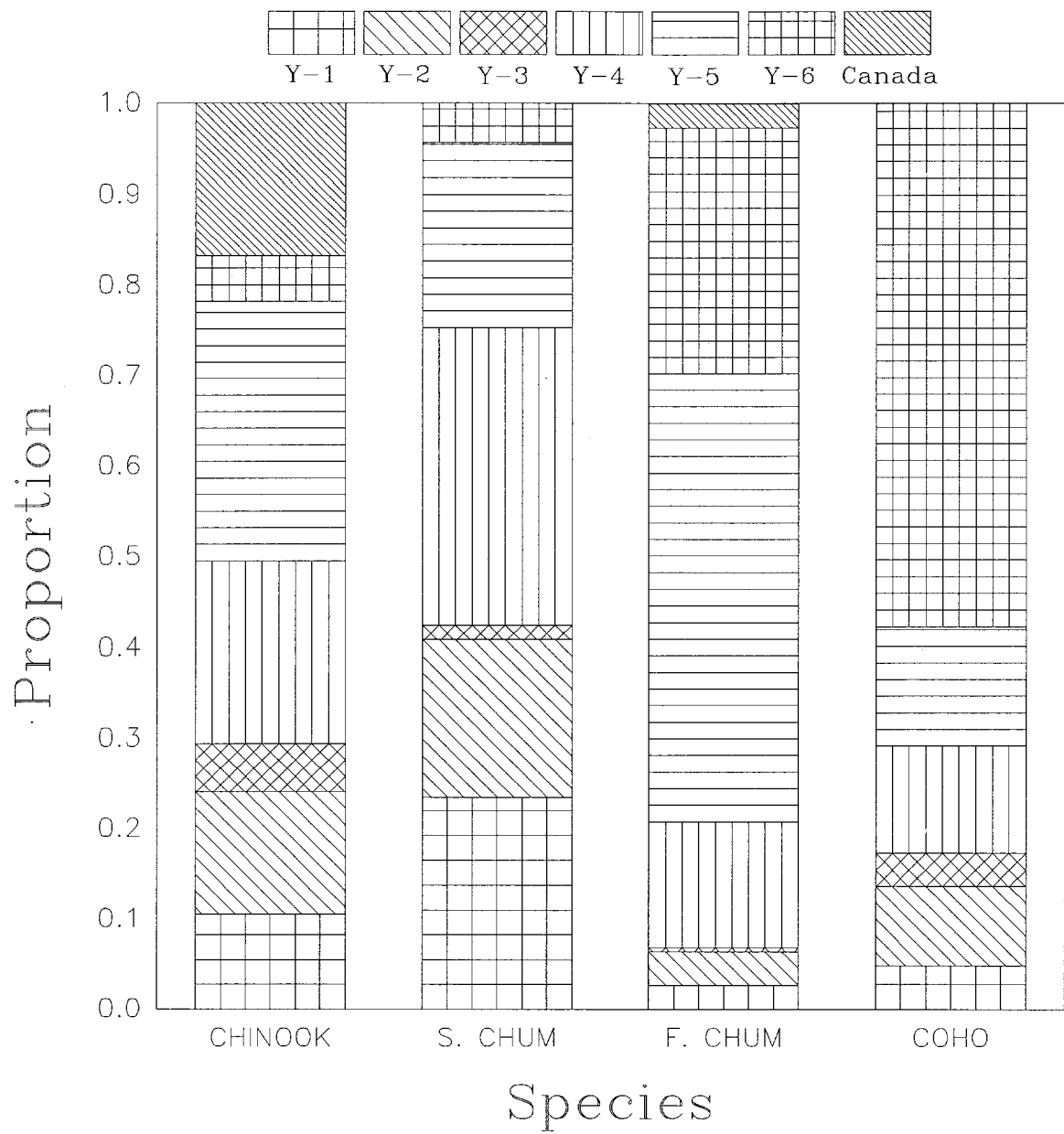


Figure 2. Distribution of the estimated subsistence salmon harvest among fishing districts, by species.

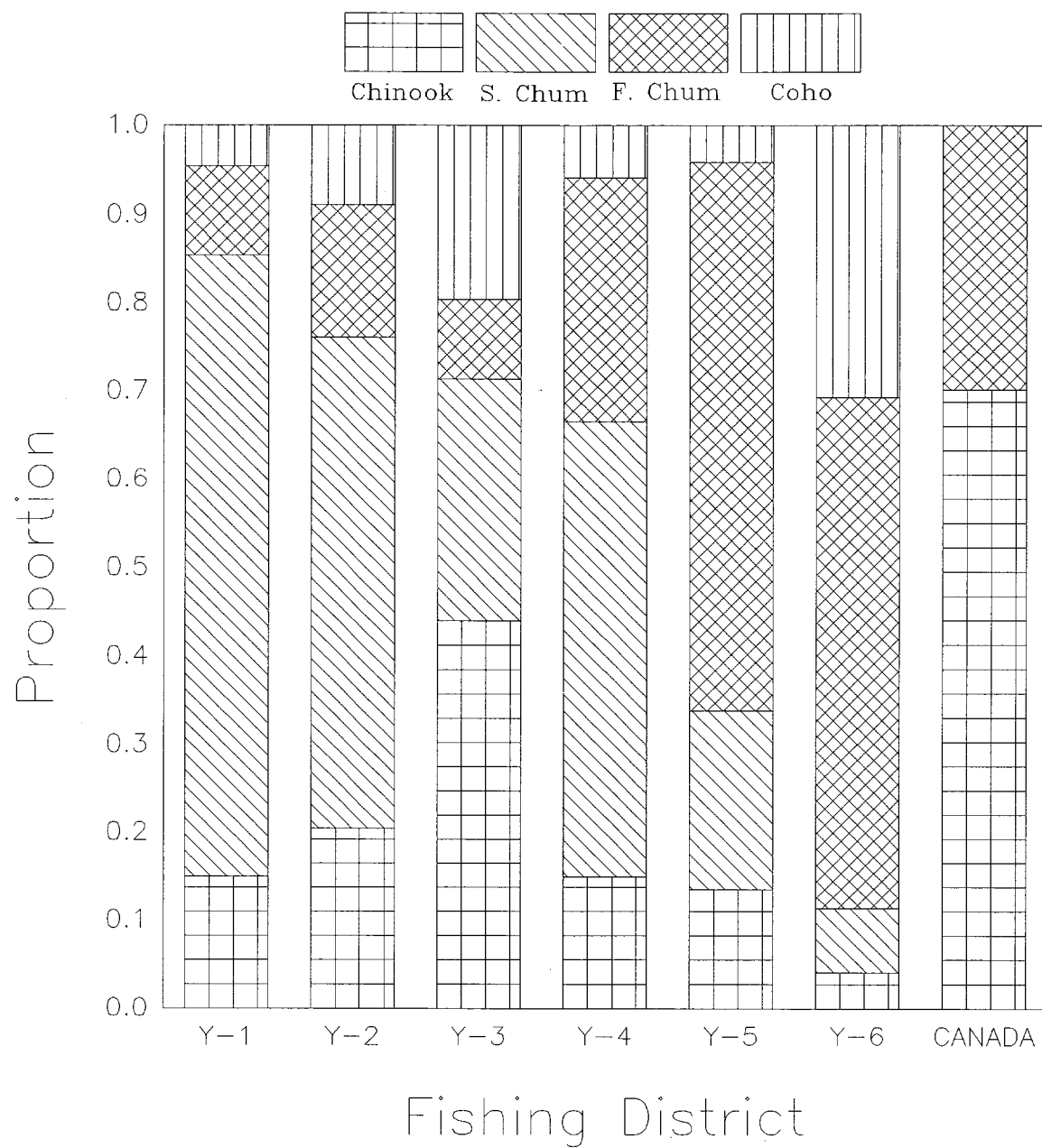


Figure 3. Species composition of the estimated subsistence salmon harvest, by fishing district.

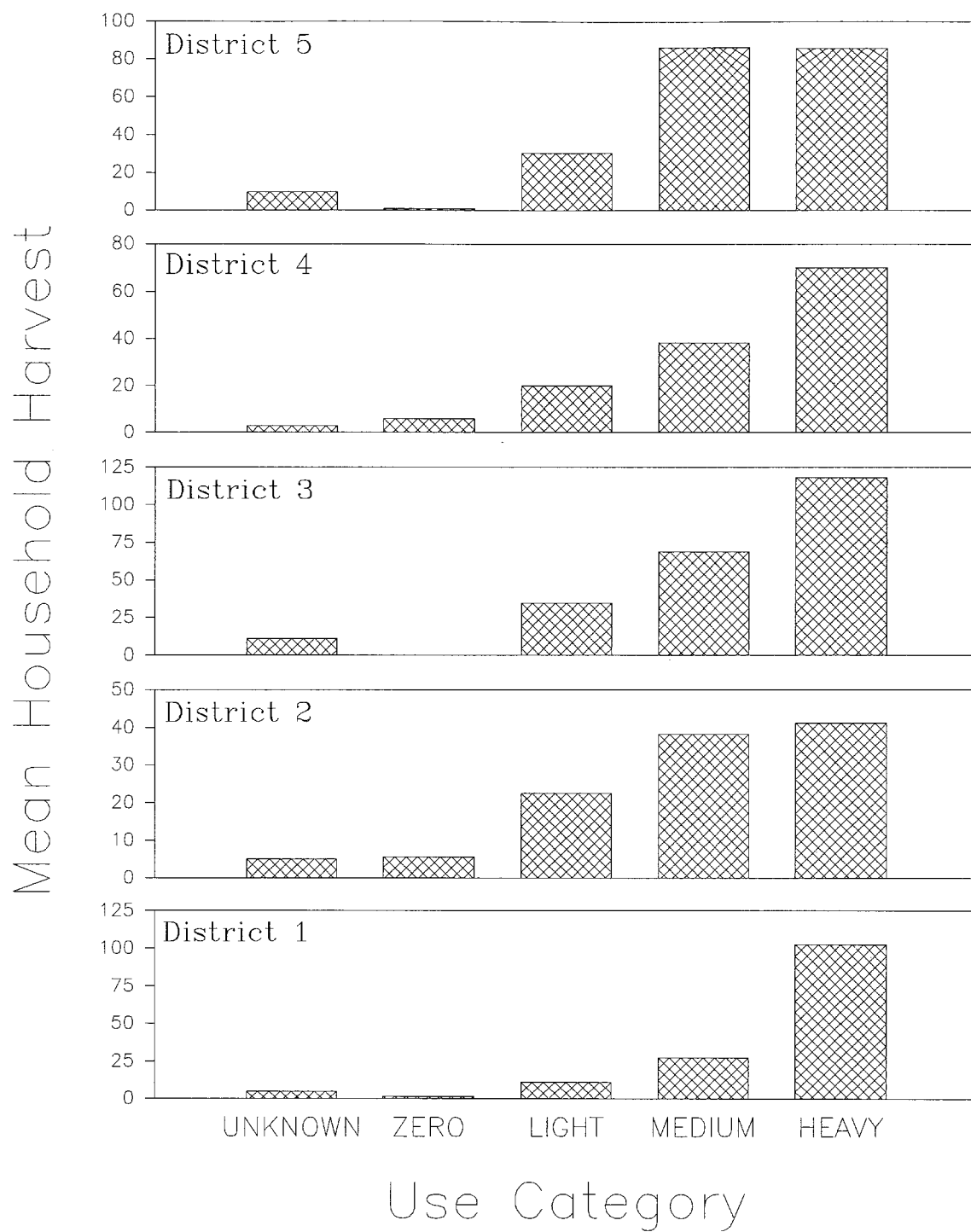


Figure 4. Estimated mean household subsistence harvest of chinook salmon by use category and fishing district.

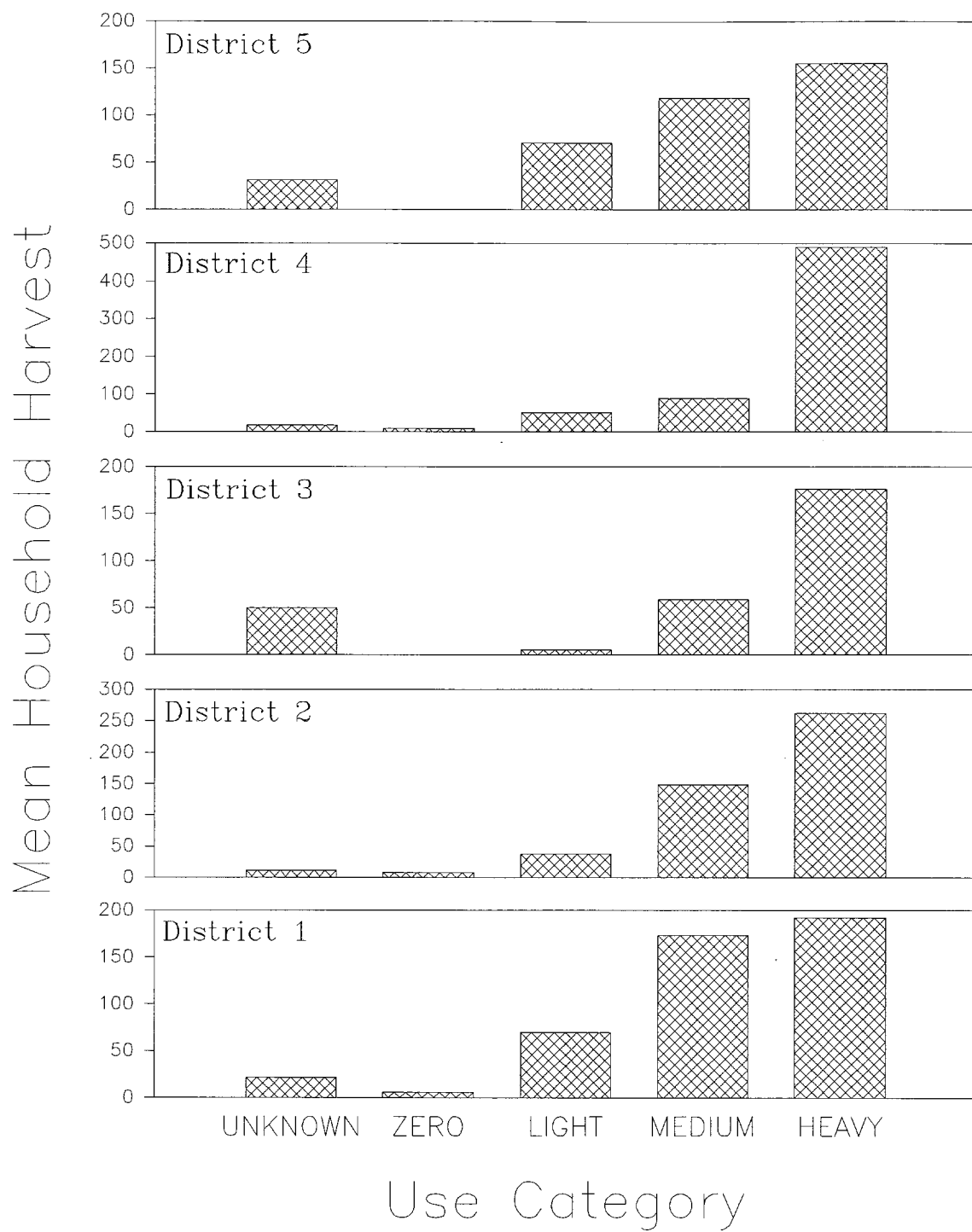


Figure 5. Estimated mean household subsistence harvest of summer-run chum salmon by use category and fishing district.

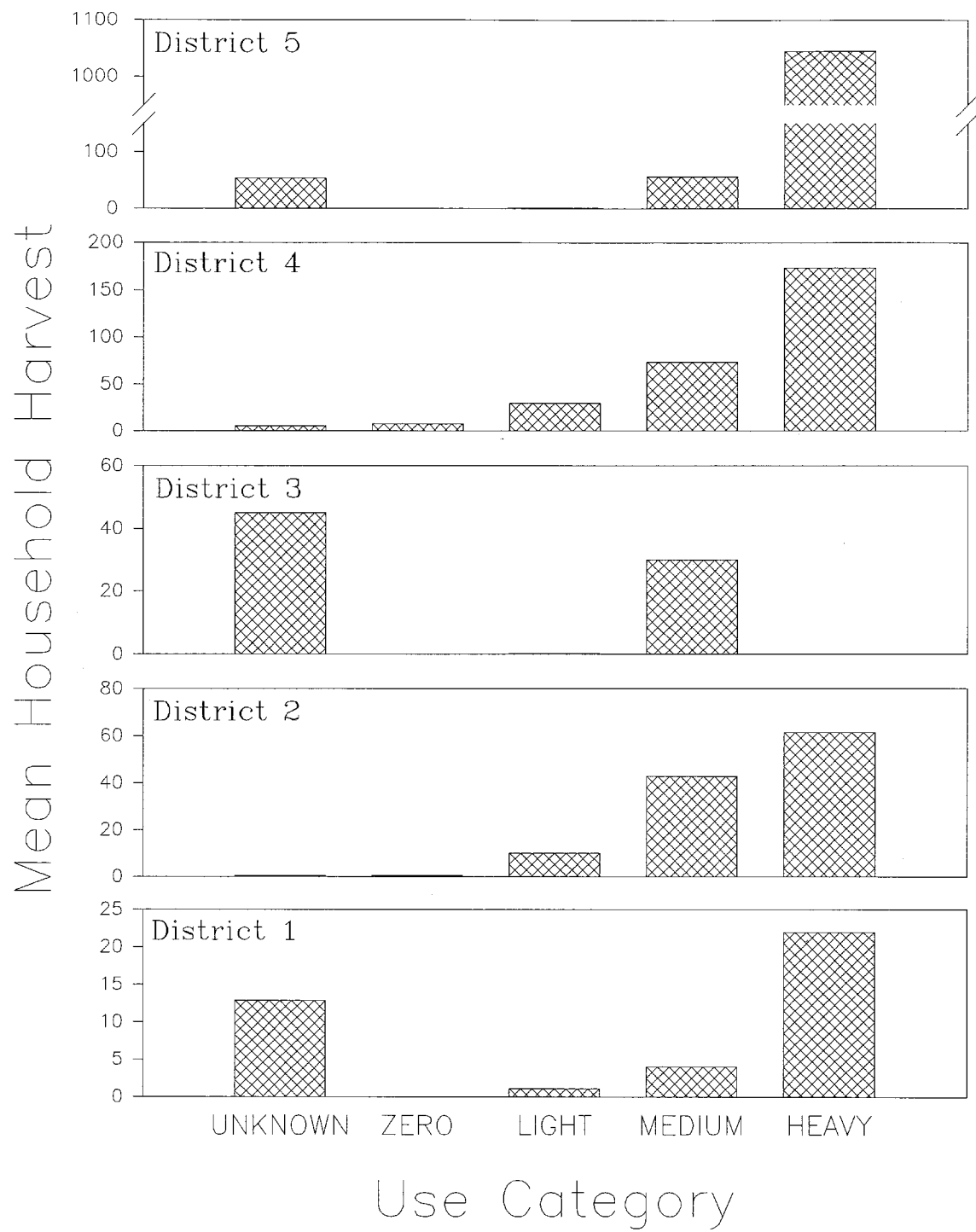


Figure 6. Estimated mean household subsistence harvest of fall-run chum salmon by use category and fishing district.

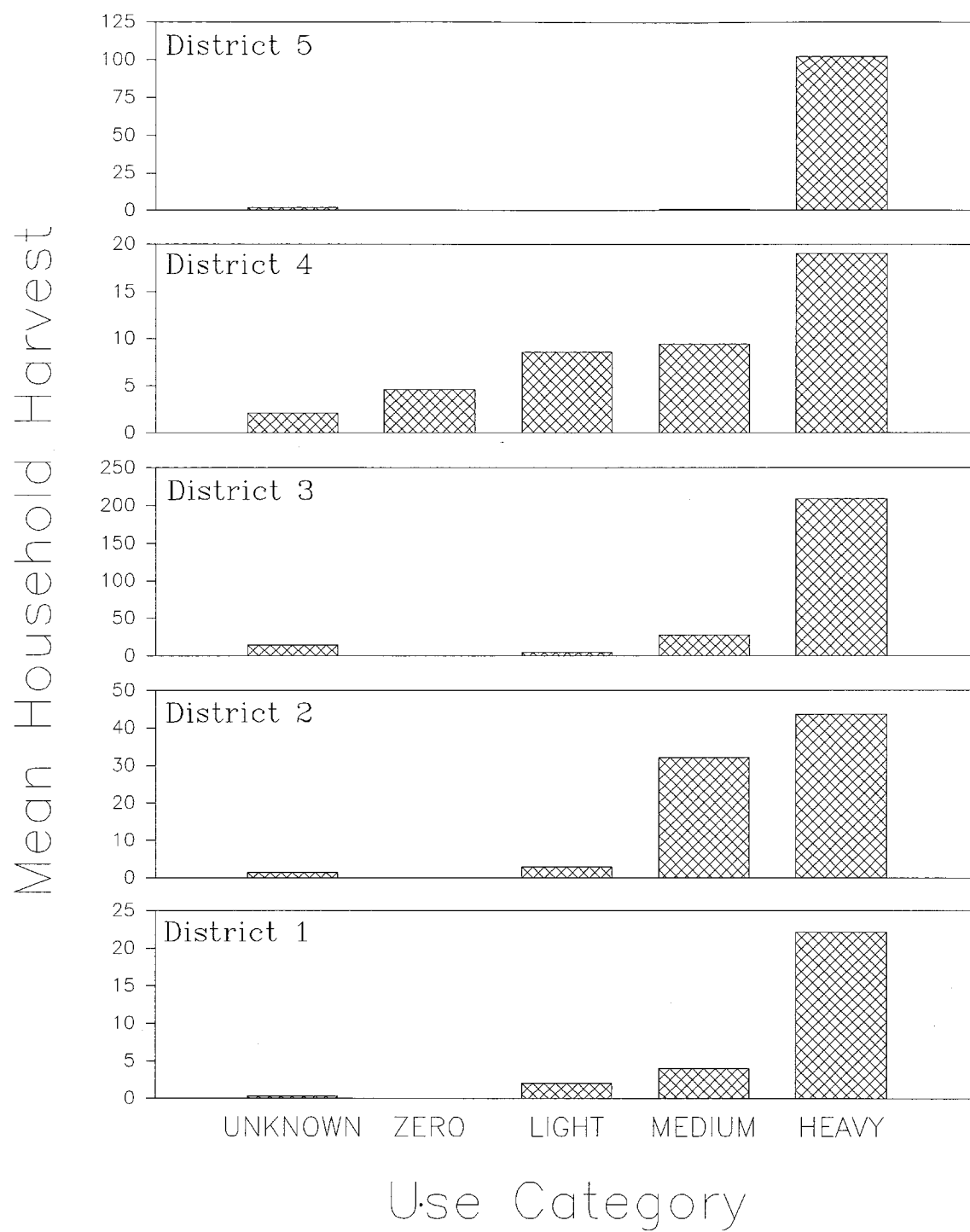


Figure 7. Estimated mean household subsistence harvest of coho salmon by use category and fishing district.

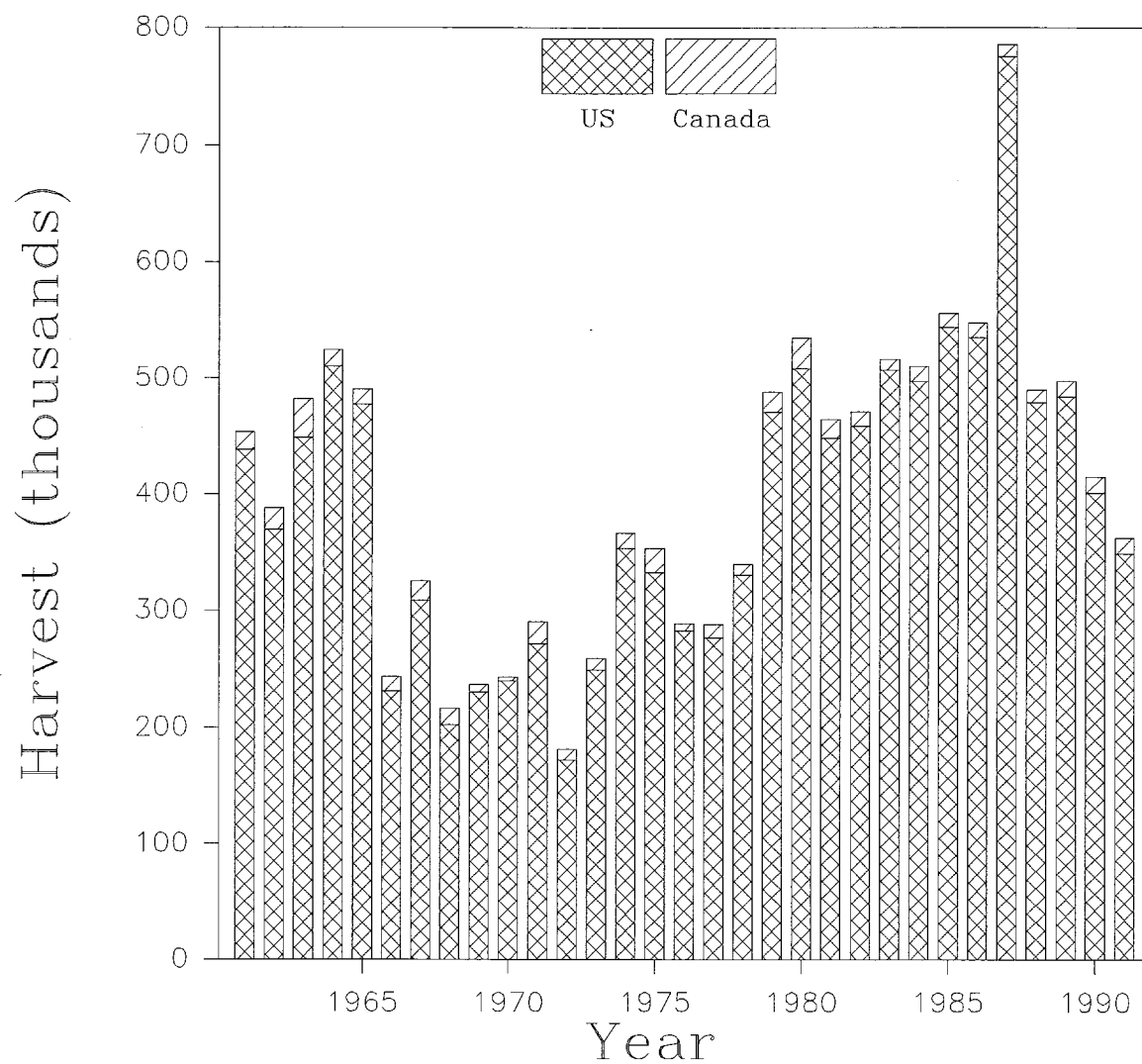


Figure 8. The estimated number of salmon harvested in Yukon River salmon subsistence fisheries in the U.S. and Canada since 1961.

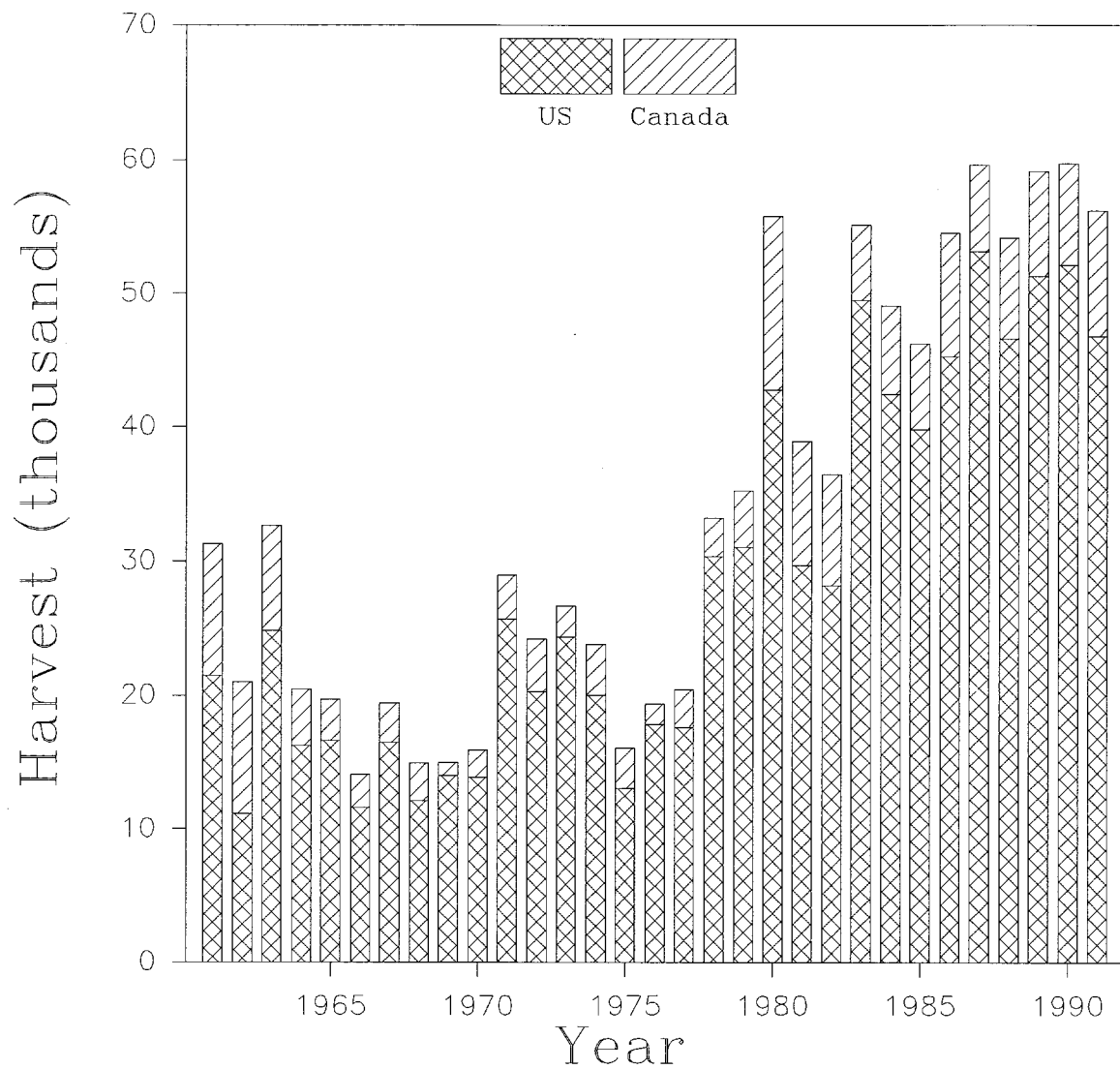


Figure 9. The estimated number of chinook salmon harvested in Yukon River salmon subsistence fisheries in the U.S. and Canada since 1961.

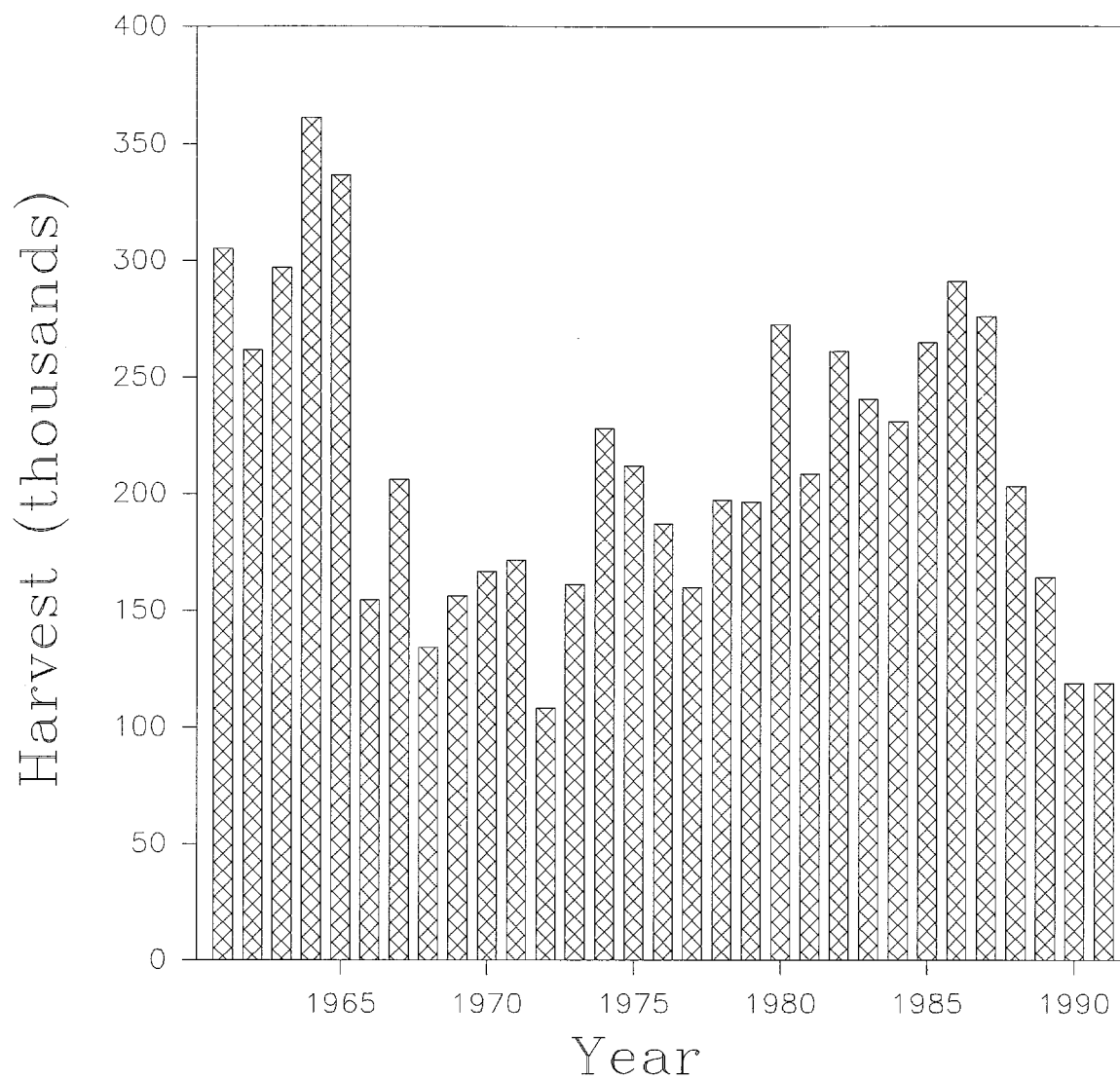


Figure 10. The estimated number of summer-run chum salmon harvested in Yukon River salmon subsistence fisheries in the U.S. since 1961.

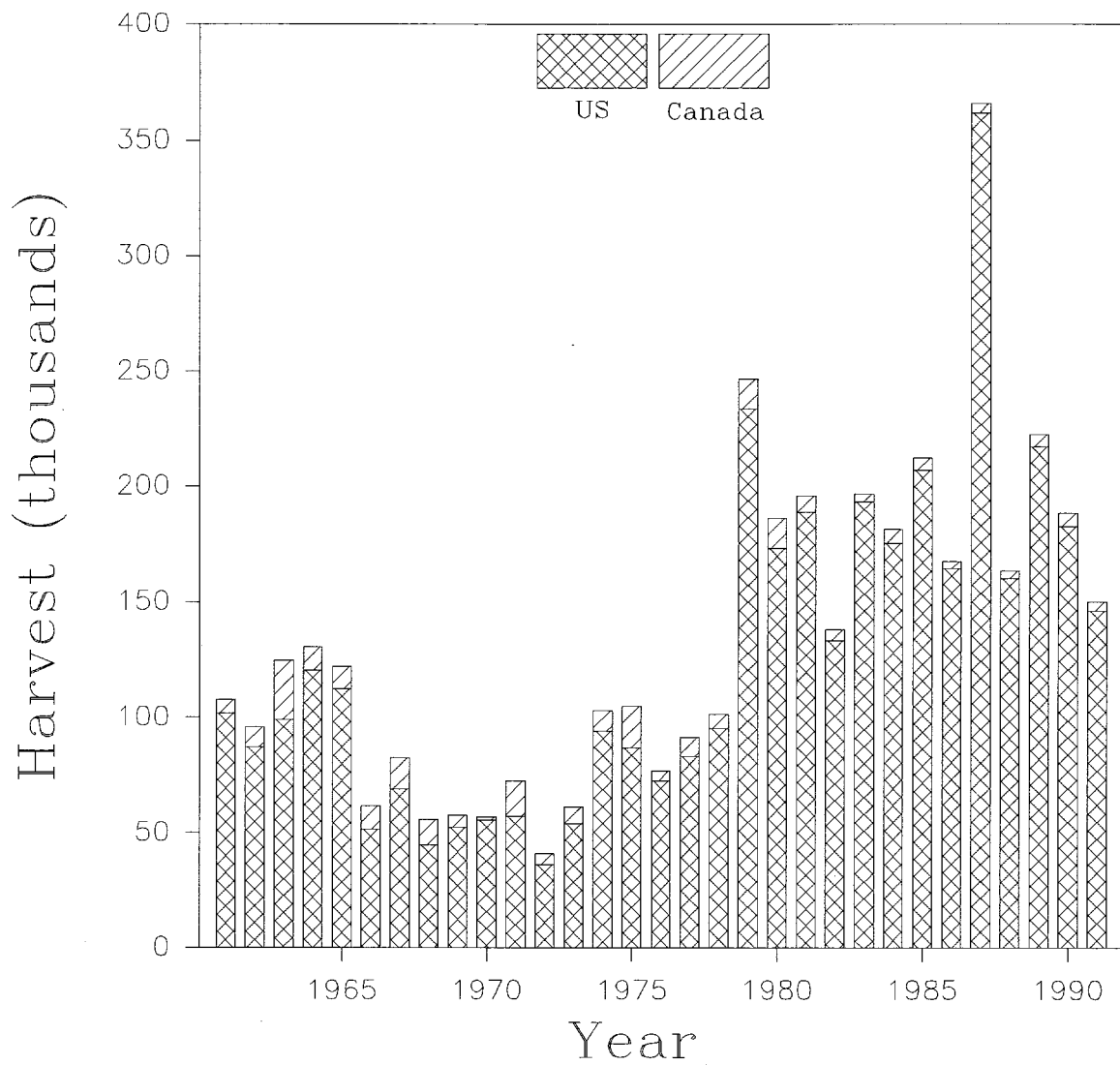


Figure 11. The estimated number of fall-run chum salmon harvested in Yukon River salmon subsistence fisheries in the U.S. and Canada since 1961.

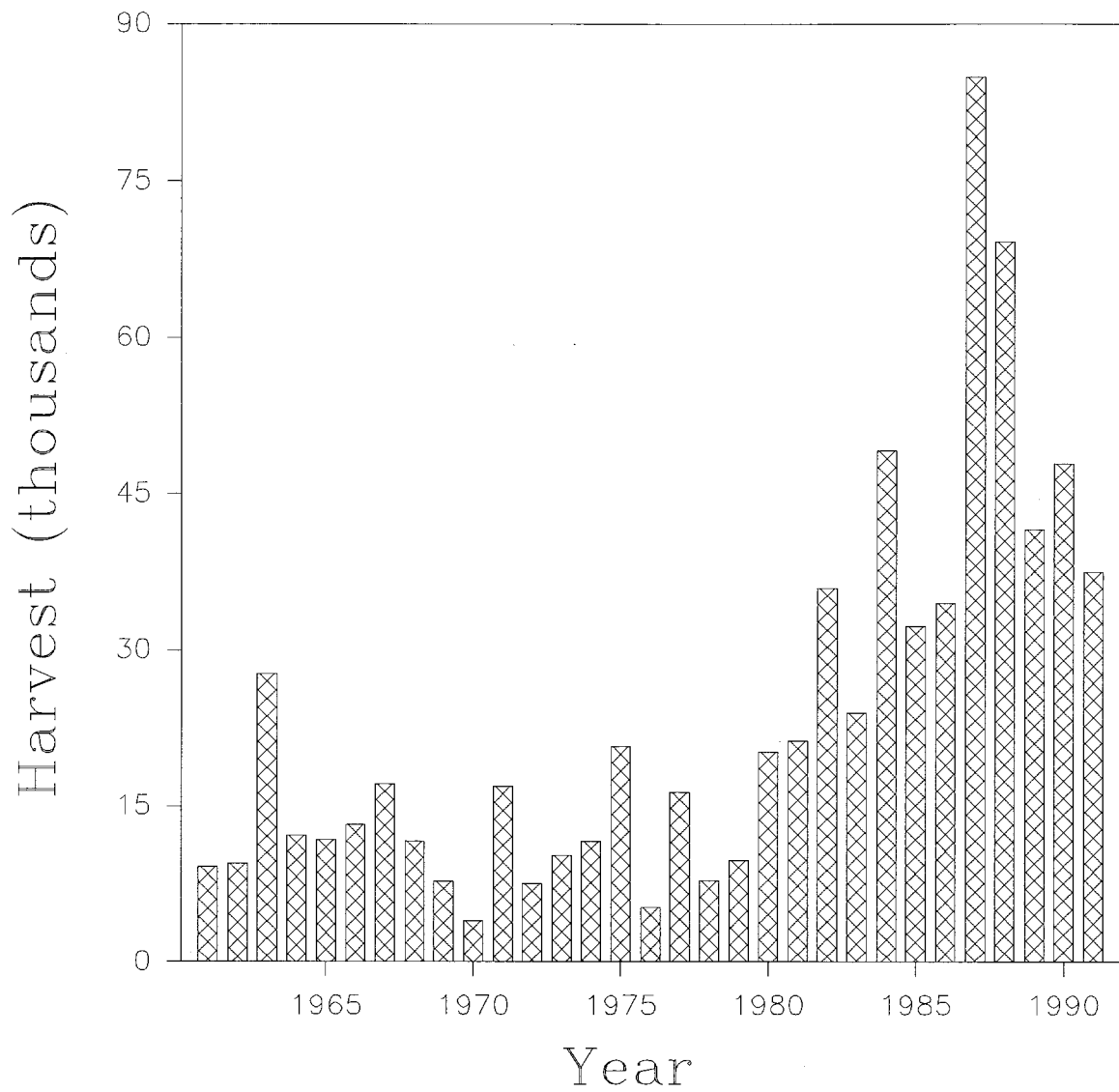


Figure 12. The estimated number of coho salmon harvested in Yukon River salmon subsistence fisheries in the U.S. since 1961.

APPENDIX

Appendix A. The survey instrument used for 1991 Yukon River subsistence salmon surveys in nonpermit communities.

Community _____ HHID# & Name _____
Date of Survey _____ Person Interviewed _____
Interviewer _____ Relation to HH _____

YUKON RIVER DRAINAGE
Subsistence Salmon Catch Calendar Post Season Interview

1. We would like to make sure we have the correct name and address for this household.

Correct name of household head _____

Mailing address _____

Phone _____

2. Did anyone living in this household fish for subsistence salmon this year?

Yes ___ (Continue) No ___ (Go to question 5).

-
3. How many subsistence salmon did members of **this household catch?** (include those eaten fresh, given away, or used for dog food - do not include fish given to you by Fish and Game or other households). **If you used your calendar to keep track of your fish - can I see it?**

_____ used a calendar for these numbers

_____ did not use a calendar for these numbers

_____ king

_____ pink (humpy)

_____ summer chum (dog salmon)

_____ fall chum (silvers)

_____ coho/silver (chinook or reds)

4. What type of gear do you usually use to catch your subsistence fish?

Set net ___ Drift net ___ Fishwheel ___

5. How many people live in this household? _____ People

6. How many dogs does this household have? _____ Dogs

Do you feed fish to your dogs? Yes ___ No ___

How many salmon do you feed to your dogs during a year? (These can be subsistence and commercial, especially Anvik, Grayling, Kaltag, and Nulato - make note if these are from the commercial fishery ___yes ___no)

_____ king

_____ summer chum (dog)

_____ silver (coho)

_____ fall chum (silver)

_____ pink (humpy)

THANK YOU VERY MUCH FOR YOUR HELP. THIS HARVEST INFORMATION WILL BE USED TO MAKE SURE THERE WILL BE ENOUGH SUBSISTENCE SALMON FOR FAMILIES ALONG THE RIVER.

Interviewer comments about this interview. Anything of value for assisting data analysis. If interviewing nonYukon River villager and catches are large - ask where they fished!!!

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